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ABSTRACT

In 1992, the National Center for Education Statistics reached the conclusion that the comparability of international education statistics needed improvement. The International Expenditure Comparability Study was undertaken for this purpose. The first volume presented detailed discussions of problems in the comparability of international education statistics, the steps required to improve the quality and comparability of expenditure data collected in different countries, and discussions of progress to date and prospects for improvement. This volume presents the quantitative adjustments to improve comparability, the effects of these adjustments on expenditures for all education levels combined and separately, and the effects of expenditure adjustments on two key indicators of countries' investment in education--education expenditures relative to gross domestic product and education expenditure per student. The following chapters are included: (1) "Quantitative Analysis of Expenditure Comparability"; (2) "Adjustment of Data on Public and Private Expenditures To Improve Comparability"; (3) "Summary of Adjustments to Countries' Expenditures"; and (4) "Effects of Adjustments to Countries' Expenditures on Selected Finance Indicators." Three appendixes discuss adjustments to data on public expenditures, expenditures relative to gross domestic product, and expenditures relative to tertiary education. (Contains 140 exhibits.) (SLD)

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Volume II, Quantitative Analysis of Expenditure Comparability

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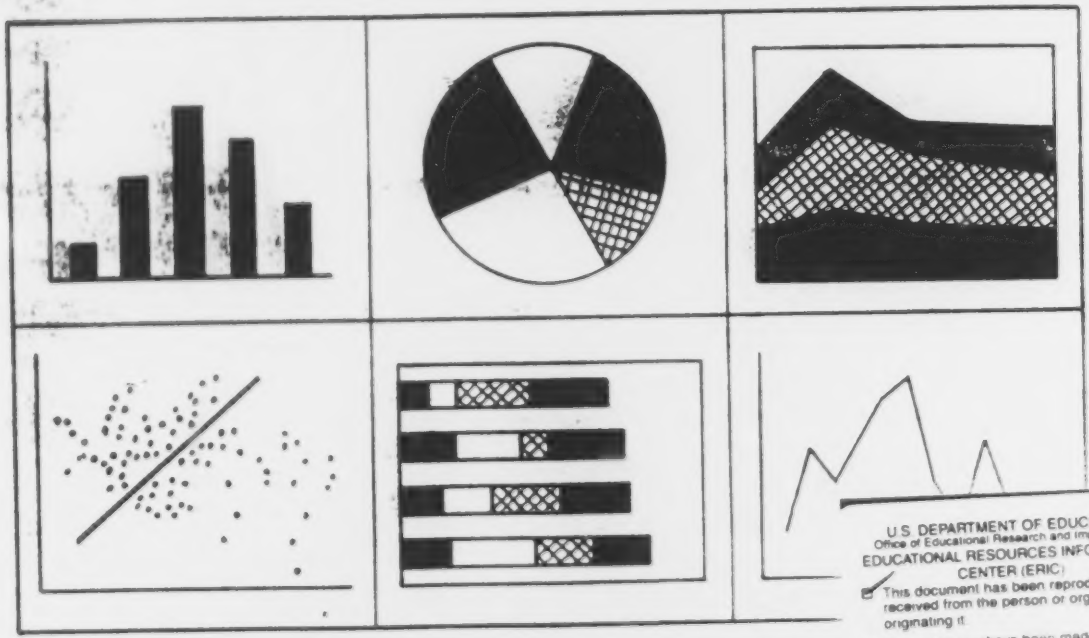

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International Education Expenditure

Comparability Study: Final Report

Volume II, Quantitative Analysis of Expenditure Comparability

Working Paper No. 97-17 May 1997

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May 1997

Foreword

Each year a large number of written documents are generated by NCES staff and individuals commissioned by NCES which provide preliminary analyses of survey results and address technical, methodological, and evaluation issues. Even though they are not formally published, these documents reflect a tremendous amount of unique expertise, knowledge, and experience.

The ***Working Paper Series*** was created in order to preserve the information contained in these documents and to promote the sharing of valuable work experience and knowledge. However, these documents were prepared under different formats and did not undergo vigorous NCES publication review and editing prior to their inclusion in the series. Consequently, we encourage users of the series to consult the individual authors for citations.

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International Education Expenditure Comparability Study:

Final Report

Volume II, Quantitative Analysis of Expenditure Comparability

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May 1997

EXECUTIVE SUMMARY — VOLUME II

Over the last decade there has been increasing interest in international comparisons of education expenditures. However, the debates about American investment during the early 1990s highlighted the problems in comparing expenditures across countries. It was clear from these debates that differences in countries' education structures, finance systems, and education statistics made it difficult to compare accurately countries' education expenditures. Early in 1992, the National Center for Education Statistics (NCES) reached the conclusion that the comparability of international education finance statistics needed improvement. The International Expenditure Comparability Study was undertaken for this purpose.

The International Expenditure Comparability Study was designed to accomplish three major objectives. These were: (1) to assess the comparability of international expenditure statistics and the validity of international comparisons based upon them; (2) to quantify the effects of deviations from common standards for a select group of economically developed countries in the Organization for Economic Cooperation and Development (OECD); and (3) to improve the quality and comparability of expenditure data and indicators in future indicator publications. Volume I of the report presented detailed discussions of problems in the comparability of international education statistics, the steps required to improve the quality and comparability of expenditure data collected by international agencies, the progress to date in correcting comparability problems, and the prospects for future improvements. Volume II presents the quantitative adjustments to improve the comparability of countries' expenditure data, the effects of these adjustments on countries' expenditures for all education levels combined, and separately for primary-secondary education and tertiary education, and finally the effects of expenditure adjustments on two key indicators of countries' investment in education — education expenditures relative to Gross Domestic Product (GDP) and education expenditures per student.

Major Study Findings

Several important findings emerged from the adjustment of countries' data to improve expenditure comparability.

Concerning expenditures relative to GDP, adjustments to improve comparability produced changes in nearly all countries' values on this indicator. However, adjustments had different effects on expenditures from different sources and expenditures for different education levels. Similarly, adjustments to expenditures changed nearly all countries' figures on expenditures per student for primary-secondary education; but these adjustments did not have a major effect on countries' relative expenditures per student and their rankings on this indicator. The key effects of expenditure adjustments follow.

First, expenditure adjustments had a relatively small effect on *public expenditures* relative to GDP for primary-secondary education and tertiary education, as well as for all education levels combined. Although countries' values on the indicator changed after expenditure adjustments, there was a strong correlation between countries' reported and esti mated

expenditures relative to GDP (Exhibit IV-8a). In addition, countries' rankings on public expenditures relative to GDP did not change very much after adjustments to improve comparability (Exhibit IV-8b).

Second, adjustments to expenditures had a relatively small impact on public and private expenditures relative to GDP for tertiary education, but a greater effect on expenditures relative to GDP for primary-secondary education and for all education levels combined. For tertiary education, the correlations between reported and estimated public and private expenditures relative to GDP were quite high (Exhibit IV-8a), as were rank order correlations between these measures (Exhibit IV-8b). In contrast, correlations between reported and estimated public and private expenditures relative to GDP for primary-secondary education and for all education levels combined were much lower.

Third, adjustments to expenditures had a relatively small effect on countries' expenditures per student for primary-secondary education. Although adjustments to expenditures to improve comparability produced a change in countries' expenditures per student, countries' relative expenditures per student changed very little as a result of expenditure adjustments. The correlations between reported and estimated public expenditures per student for primary-secondary education were quite high (Exhibit IV-8a), as were the rank order correlations between these measures (Exhibit IV-8b).

Assessment of the Quality of OECD Expenditure Indicators

The analysis of the effects of expenditure adjustments on key finance indicators leads to several conclusions about the quality of the indicators published by the OECD in *EAG2*.

First, it is clear from this analysis that, despite the comparability problems, **expenditure data reported to the OECD for *EAG2* provide a good measure of countries' *public expenditures relative to GDP*, for all education levels combined, as well as for primary-secondary education and tertiary education.** The reported data also provide a good indicator of countries' rankings on public expenditures relative to GDP. Although adjustments to expenditures resulted in increases or decreases in expenditures in all countries, they had very little effect on countries' relative standing on this indicator. Most or all countries changed their rankings on this indicator by two or fewer places as a result of adjustments to improve comparability, and the rank order correlations between countries' reported and estimated expenditures were quite high at all education levels. **Policy makers and the general public should therefore have a great deal of confidence in the OECD indicators of *public* expenditures relative to GDP.**

Second, expenditure data provided to the OECD also provide a good indicator of countries' *public and private expenditures relative to GDP for tertiary education* and their relative ranking on this indicator. The indicator is, however, more problematic for all education levels combined and for primary-secondary education. At the tertiary level, adjustments to improve comparability again did not change significantly most countries' rankings on the indicator relative to other countries in the study. However, this was not the case for all education levels combined and for primary-secondary education. Countries such as Austria and the United Kingdom did not include substantial private expenditures in their non-tertiary sectors in their OECD submissions. Consequently, estimated additions to expenditures to fill in missing

sectors and activities both increased these countries' expenditures relative to GDP and their rankings on the indicator relative to other countries. **A high level of confidence is therefore warranted in countries' rankings based on the OECD indicator of public and private expenditures relative to GDP for tertiary education, but not as much for primary-secondary education and for all education levels combined.**

Third, expenditure data reported to the OECD for *EAG2* provide a very good indicator of countries' *expenditures per student for primary-secondary education* and countries' relative ranking on this indicator. This is the case both for public and private expenditures per student combined and for public expenditures per student alone. Again, adjustments to address comparability problems produced changes in expenditures in all countries, and, in counties such as Austria and the United Kingdom, the additions to expenditures for primary-secondary education were substantial. However, with the exception of Austria, these adjustments had very little effect on countries' rankings on this indicator. No country except Austria changed its ranking by more than two places on the indicator of expenditures per student, and the rank order correlations between reported and estimated expenditures per student were quite high. **As with public expenditures relative to GDP, policy makers and the general public should have a great deal of confidence in countries' rankings based on the OECD indicators of both public and private expenditures and public expenditures per student for primary-secondary education.**

Finally, an important concern of policy makers is how the United States compares with other countries in its expenditures for education. On this point it is clear from the analysis that **the data reported to the OECD for *EAG2* provide a very good indicator of how the United States ranks on its investment in education, compared to other countries, at all education levels.** Looking first at expenditures relative to GDP, the analysis finds that, based on reported expenditures, the United States ranked near the top of the 10 countries on public and private expenditures relative to GDP for all education levels combined, as well as for primary-secondary education and tertiary education. After adjustments to expenditures, the United States continued to be near the top of the 10 countries' rankings on this indicator for all education levels combined and for tertiary education, but was slightly lower in the rankings on the indicator for primary-secondary education. The results were slightly different for public expenditures relative to GDP. The United States continued to be near the top of the 10 countries' rankings on this indicator for tertiary education, but was slightly lower in the rankings for primary-secondary education and for all education levels combined.

Similar results were found for the indicator of public and private expenditures per student. Adjustments to expenditures again produced relatively small changes in the position of the United States on the indicator. Based on reported expenditures, the United States ranked near the top of the 10 countries on public and private expenditures per student; after adjustments, the ranking dropped by one or two places. On public expenditures per student alone, the United States ranked near the top of the 10 countries, based on both reported expenditures and estimated expenditures after adjustments.

It is, of course, difficult to quantify precisely the quality of the expenditure indicators published by the OECD in *EAG2*. However, the summary table that follows attempts to provide a relative sense of the overall quality of the indicators. Indicators that are assessed to be the best in

overall quality are designated as "+++;" indicators that are of good quality are designated with a "++"; indicators that are more problematic are designated as "+." Finally indicators that have not been thoroughly assessed are designated with a "—."

EXHIBIT IV-9

Overall Quality of Indicators of Expenditures Relative to GDP and Expenditures Per Student

Finance Indicator	All Education Levels	Primary-Secondary Education	Tertiary Education
Public and Private Expenditures Relative to GDP	++	+	+++
Public Expenditures Relative to GDP	+++	+++	+++
Public and Private Expenditures Per Student	—	+++	—
Public Expenditures Per Student	—	+++	—

Source: *International Expenditure Comparability Study*, 1997.

In summary, adjustments to expenditures to address comparability problems clearly produced increases or decreases in all countries' expenditures. However, the adjustments had very little effect on countries' positions on the two major indicators of countries' public financial investment in education. Although expenditure data countries submitted to the OECD for *EAG2* were deficient in many respects, they were more than adequate to provide good indicators of countries' public expenditures for education.

Steps to Improve the Comparability of International Expenditure Data

Although the expenditure indicators reported by the OECD provide a good picture of countries' overall investments in education and their rankings on some key education indicators, that does not mean that further improvements are not needed in the expenditure data. Two main actions are required to improve further the quality and comparability of expenditure data used in international comparisons. Most important, the international organizations should continue to work on improving their data collection forms, providing better instructions to countries to

complete the forms, and providing better definitions of terms and methods for estimating expenditures that are missing from national datasets. In addition, countries participating in international collections of finance data should attempt to improve the quality of the data they submit to international agencies. Statistical agencies and education ministries should identify data sources to fill in gaps in their submissions, e.g., include private expenditures for education more consistently, adhere more closely to definitions and calculation procedures to provide more accurate and comparable data, and adopt standard procedures for estimating expenditures or allocating expenditures across education levels.

Since the International Expenditure Comparability Study was initiated in 1992, several major steps have been taken to improve the comparability of expenditure data, based in part on the work of this study. The OECD substantially revised its finance collection for the third edition of *Education at a Glance*, providing more specific and comprehensive instructions to countries to complete the surveys and requiring much more detail on expenditures to permit better understanding of the contents of countries' data. Many of the changes in data collection procedures were described more fully in Volume I of this report. Furthermore, some countries have modified the expenditure data they provide to international agencies to address the comparability problems identified in Volume I of this study; other countries are considering similar actions for future international collections.

Major change in international data collections does not come overnight: change is incremental and frequently takes a long time. However, an important conclusion of this study is that improvement is possible — particularly after problems of data comparability have been documented thoroughly. Improvements to the OECD finance collections for subsequent editions of *EAG* have already addressed many of the comparability problems described at length in Volume I of this study. It would therefore be anticipated that expenditure data used to produce the indicators reported in the third and fourth editions of *EAG* and other international reports will provide even more accurate pictures of countries' financial investments in education.

ACKNOWLEDGEMENTS

The International Expenditure Comparability Study is a report that reflects the efforts of many people. The contributions of the following people to Volume II of the report deserve special mention. Richard Phelps, of the Pelavin Research Institute, analyzed comparability problems and developed the adjustments to several countries' expenditure data. Laura Salganik provided thoughtful comments on various drafts of the report and helped greatly in managing the project. Sterlina Harper typed numerous iterations of text and tables and contributed to the production of the report.

The study benefitted significantly from the involvement of numerous people at the National Center for Education Statistics. Jeanne Griffith, Paul Planchon, and John Ralph contributed to the design of the study and provided strong support throughout the project. Shelley Burns served as the Project Monitor for the study and reviewed the study's progress. Dawn Nelson, Eugene Owen, and Mary Frase reviewed numerous study drafts and provided helpful advice about the structure and content of the final report.

A special thanks goes to Norberto Bottani, Director of the INES Project at the OECD, who facilitated the collaboration between the study team and the INES Project and fostered the participation of several countries in the study. Ms. Catherine Duchêne, of the INES Secretariat, supplied INES data for the project and provided advice on many technical aspects of the INES expenditure statistics.

The study benefitted greatly from the assistance of education officials, statisticians, and other experts in the 10 participating countries. Several people invested substantial time and effort in the study, participating in several days of meetings and responding to numerous questions about their countries' statistics and accounting systems. The following people deserve a special thanks for their contributions to the study.

Australia:	Michael Gallagher, Alan Auzins, Ken Silberberg, and others at the Australian Department of Employment, Education, and Training (DEET) and the Australian Bureau of Statistics (ABS).
Austria:	Friedrich H. Plank, Bundesministerium für Unterricht und Kunst (BMUK); Peter Neudorfer, Bundesministerium für Wissenschaft und Forschung (BMWF); and Walter Stübler and Dr. Franz of the Austrian Central Statistical Office.
Canada:	Kathleen Campbell, Ken Bennett, Douglas Lynd, and others at Statistics Canada.
France:	Alain Michel and Michel Euriat of the Ministére de l'Éducation Nationale, and Prof. François Orivel, Université de Bourgogne.
Germany:	Ingo Russ and Dr. Elmar Freund, Bundesministerium für Bildung und Wissenschaft, and Walter Hörner and Heinz-Werner Hetmeier, of the Statistisches Bundesarnt.
Netherlands:	Nicholas Dersjant, Ruud Abeln, and many of their colleagues at the Ministerie van Onderwijs en Wetenschappen; Max van Herpen and colleagues at the Centraal Bureau voor de Statistiek.

Spain:	Isabel Muñoz, Eduardo de la Fuente, and their colleagues at the Ministerio de Educación y Ciencia and Instituto Nacional de Estadistica.
Sweden:	Birgitta Andrén, Skolverket; Bertil Bucht, Ministry of Education and Science; and Per Nordling and his colleagues at Statistics Sweden.
United Kingdom:	Michael Davidson, Alison Kennedy, and their colleagues at the Department for Education.
United States:	Thomas Snyder and his colleagues at the U.S. National Center for Education Statistics.

Finally, Stephen Barro of SMB Economic Research, Inc. developed the adjustments to expenditure data to address comparability problems in Austria, France, Sweden and the United Kingdom and assisted in developing adjustments in Germany. Partial financial support for the case studies within the United Kingdom and Sweden was provided to SMB through a related study for the Finance Center of the Consortium for Policy Research in Education (CPRE), a research center sponsored by the U.S. Department of Education's Office of Educational Research and Improvement (OERI). SMB also obtained funding for a case study of Austria from a separate contract with the Austrian government. All findings and conclusions are solely those of the author.

Joel D. Sherman
Project Director

VOLUME II — PREFACE

INTRODUCTION TO THE STUDY

In recent years there has been increasing interest in international comparisons of education expenditures. Interest in the United States was stimulated initially by a report released in early 1990 by the Economic Policy Institute (EPI), a Washington-based advocacy group, which claimed that the United States was "underspending" for K-12 education compared with its major economic competitors. Although much of the ensuing debate centered around the issue of whether absolute or relative comparisons of education spending are more meaningful (i.e., whether one should compare education expenditures per pupil or education expenditure as a percentage of gross domestic product [GDP]), the interchanges among EPI and its critics also shed light on both the technical problems of comparing spending across countries and the shortcomings of the data available from the Organization for Economic Cooperation and Development (OECD) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

The problems of comparing education expenditures were also apparent from the work of the OECD's International Education Indicators Project (INES). From the early days of the project there was reason to expect problems of comparability in countries' finance data, but no one knew for sure how serious the problems were or how difficult it would be to correct them. By mid-1992, however, as work went forward with the preparation of *Education at a Glance (EAG1)*, it became clear from both the national data submissions to INES and the continuing dialogue between INES staff and country representatives that the comparability problems were both real and substantial. The conclusion that comparability problems had to be addressed was subsequently reinforced by the prominence given to the finance indicators in press coverage of

EAG1 and the political problems created for some governments by some questionable expenditure comparisons based on the *EAG1* figures.

Early in 1992, the National Center for Education Statistics (NCES) reached its own conclusion that the comparability of education finance statistics needed to be improved and in June 1992 awarded a contract to Pelavin Associates, Inc. and a subcontract to SMB Economic Research, Inc. to conduct the International Expenditure Comparability Study. At the outset, an agreement was reached with OECD that this inquiry would be carried out in close collaboration with INES and, more specifically, that the study would be strongly oriented towards improving the finance indicators for subsequent editions of *Education at a Glance*. Shortly after work on the study began in mid-1992 the INES Secretariat sent a letter to the project's national coordinators and technical group representatives describing the study and inviting selected countries to participate.

Features of the International Expenditure Comparability Study

The International Expenditure Comparability Study was designed to accomplish three major purposes: (1) to assess the comparability of existing international expenditure statistics and the validity of intercountry comparisons based upon them; (2) to quantify the effects of deviations from common standards for a select group of economically developed countries; and (3) to improve the quality and comparability of expenditure data and indicators in future indicator publications. More specifically, the study was designed to address the following questions:

- Do data collected by international agencies permit valid comparisons of expenditures between the United States and other countries?
- What are the major comparability problems in countries' expenditure data and what is the severity of these problems for expenditure comparability?

- How can these comparability problems be addressed through the improvement of both international data collections and the expenditure data countries provide to international agencies?

- How do expenditures for education in the United States compare with expenditures in other countries?

At the outset of the study, several key decisions were made about the scope and methodology of the study that guided the subsequent conduct of the research. These decisions concerned: (1) the countries included in the study; (2) the data set that would be used to analyze comparability problems; and (3) the strategy for data collection and analysis.

Countries Selected for the Study

In addition to the United States, eight OECD countries regarded as economic competitors to the United States or whose education systems are of interest to American policy makers were selected for the study. These are: Australia, Canada, France, Germany, the Netherlands, Spain, Sweden, and the United Kingdom. NCES also expressed interest in including Japan in the study, but efforts to secure Japan's participation proved unsuccessful. In addition, Austria independently requested a review of its OECD data submission by Stephen Barro of SMB Economic Research Inc.; Austria was therefore included in the comparability analysis.

Data Collections Selected for the Study

Two major international data collections were considered as the reference point for the study. These were: (1) the finance collection conducted each year by UNESCO, OECD and Eurostat (the statistical office of the European Union) using the joint questionnaire (UOC2); and (2) the INES Project's expenditure tables collected for *EAG1* in 1991 and again for *EAG2* in 1993. The INES collection was ultimately chosen for the study for two reasons. First, the collection had undergone careful scrutiny by technical experts who had already identified many of the comparability problems. Second, the INES Project could draw on the work of the expenditure

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comparability study to improve the next rounds of data collection for *Education at a Glance*. Throughout our field work, however, we consistently used the joint questionnaire as a secondary frame of reference to improve our understanding of differences in countries' finance data.

Data Collection Strategy

The data collection strategy selected for this study involved the following steps. The first step was a detailed review of published reports and other material describing each country's education structure, finance arrangements, and national education statistics. Through this review we attempted to learn how education is organized and financed in each country; how each country collects and assembles its own internal expenditure data; how the country defines its expenditure categories; and what the country includes in and excludes from its education expenditure figures.

The second step involved a field visit to each country to learn first-hand from officials and experts how finance statistics are compiled and what the statistics mean. Our field visits generally included meetings with officials from education departments or ministries and technical experts in national statistical offices, but in some countries we also met with representatives of local governments, university administration, and education associations. The one exception to this process involved France, where we employed Professor François Orivel as a consultant to assemble basic information on France's education statistics and associated comparability problems.

The third step involved the preparation of detailed country reports describing potential and actual problems of data comparability and possible measures that could be taken to address these problems, either by the country or by INES. Draft reports were sent back to country officials for verification and correction and revised reports were prepared that incorporated the comments of country officials. In some cases, we also sent follow-up questions to request information about points that were not adequately covered during the field visits.

The last two steps in the process involved the development of the multicountry synthesis of comparability problems and the quantification of the deviations from comparability in each country.

The findings of the international expenditure comparability study are organized into two volumes. Volume I presents detailed discussions of the nature, prevalence, severity, and causes of problems in comparing education expenditures across countries. It also assesses progress to date in correcting these problems and prospects for further improvements. Volume II presents a quantitative analysis of the combined effects of multiple comparability problems on selected education statistics and indicators. Each volume lays out the implications of its findings for policy makers and other users of international expenditure statistics.

Organization of Volume II

Volume II presents the quantitative adjustments that were made to improve the comparability of countries' expenditure data and the effects of these adjustments in the 10 countries that participated in the study.[1] Chapter I begins with a discussion of the activities that were undertaken to conduct the quantitative analysis of expenditure comparability. Chapter II presents the adjustments to each country's data on *public and private expenditures* to improve comparability and the effects of these adjustments to public and private expenditures for all education levels, primary-secondary education, and tertiary education.[2]

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[1]The methodology to adjust countries' expenditure data to improve comparability was developed by Joel Sherman, the author of Volume II. Dr. Sherman and Richard Phelps at the Pelavin Research Institute used this methodology to adjust expenditure data for Australia, Canada, Germany, Spain, and the United States. Stephen Barro of SMB Economic Research, Inc. adjusted the data for Austria, France, the Netherlands, Sweden, and the United Kingdom and assisted in the adjustment of expenditure data for Germany.

[2]Adjustments were also made to each country's data on *public expenditures alone* at all education levels. As the effects of adjustments to public expenditures alone were similar to those for public and private expenditures combined, we have included the exhibits that summarize these adjustments in Appendix A to the report.

Chapter III presents the multicountry synthesis of the effects of expenditure adjustments to improve comparability. The first section examines the impact of adjustments on total expenditures, focusing first on the impact of adjustments on public and private expenditures combined and then on the impact of adjustments on public expenditures alone. Three levels of education are included in the synthesis: primary-secondary education; tertiary education; and all education levels combined, which includes these two education levels and preprimary education. The second section examines the effects of adjustments of expenditures per student for primary-secondary education and the third section examines the factors that affect countries' estimated expenditures after adjustments to improve comparability.

Chapter IV presents the analysis of adjustments of countries' expenditure data on two key indicators of countries' overall investments in education. The first indicator used in the analysis is education expenditures relative to Gross Domestic Product (GDP); the second is education expenditures per student. Both of these analyses compare countries' expenditures before and after adjustments to improve comparability and each country's ranking on the indicator before and after expenditure adjustments. The chapter also includes a summary of the effects of adjustments on key finance indicators, as well as an assessment of the effects of adjustments to improve comparability on the standing of the United States on the two key indicators. The chapter concludes with a brief discussion of steps that have been taken to improve the comparability of expenditure data since this study was initiated.

Readers who are interested primarily in the effects of expenditure adjustments to improve the comparability of international expenditure data should turn directly to Chapters III and IV, as these chapters focus on the study's major findings. Those interested in the details of adjustments to each of the 10 countries' expenditure data will find this information in Chapter II and in Appendix A, which presents the adjustments to countries' total public expenditures alone. Other technical information is also contained in Appendices B and C of the report.

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CHAPTER I

QUANTITATIVE ANALYSIS OF EXPENDITURE COMPARABILITY

Introduction to the Quantitative Analysis

One of the major purposes of the International Expenditure Comparability Study was to quantify the effects of deviations from a common standard, if possible, by "adjusting" countries' finance data to make international statistics and indicators more comparable. Our purpose in making these adjustments was **not** to establish new point estimates of a particular finance statistic. Rather, the purpose was to establish the bounds for this statistic and to determine whether the adjustment of a country's data to improve comparability would affect its standing on key international indicators.

The empirical aspect of the expenditure comparability study required the conduct of several important activities. These included:

- Establishment of an operational definition of expenditures to judge the comparability (or noncomparability) of each country's finance data.
- Selection of a data set to use as the base from which to judge deviations from comparability.
- Review of each country's finance data to determine whether adjustments were feasible to address comparability problems.
- Adjustment of finance data, to the extent feasible, to improve comparability.

Establishment of an Operational Definition of Expenditures

The first major task in the empirical analysis was the establishment of an operational definition of expenditures which could be used to judge the comparability of countries' finance data. The main reason this task had to be undertaken was that a well-defined international standard that can be used to compare countries' education expenditures does not currently exist.

Although the OECD and UNESCO have collected and reported finance statistics for many years, neither organization had yet developed clear-cut standards that could be used in the comparability analysis.[1] In addition, there does not exist a well-defined American standard to which other countries' finance data could be adjusted and compared. Although the United States does publish statistics on education expenditures, these statistics are the product of existing data collections, rather than a consciously designed standard for accounting for education expenditures in a comprehensive manner.

Our starting points in the development of an operational definition of expenditures for the comparability analysis were the definitions of expenditures in the finance collections of the OECD's INES project and current U.S. practice in reporting data on education expenditures. To develop the operational definition we first reviewed the INES definitions of expenditures to identify gaps and ambiguities; we then compared the INES definitions with U.S. reporting practices to determine areas of noncomparability. The review of the INES definitions determined that for some types of expenditures, classroom instruction for example, there was a clear definition that most countries were consistently able to follow. For other expenditures, e.g., employees' retirement benefits, the reporting instructions specified that expenditures should be included in national data, but there was not enough specificity in the instructions for countries to be able to provide comparable data. And for other expenditures, e.g., food services for students, there were no clear instructions as to whether these expenditures should be included in the data submissions or how expenditures should be calculated if they were to be included.

The comparison of INES definitions and expenditure data with current U.S. reporting practices identified some differences between them, but many of these differences were due more

[1]The INES project developed standards based in part on the findings of this study after the second edition of *Education at a Glance* was published.

to gaps in the U.S. data than to conceptual disagreements about which activities or functions should be included in expenditures. The treatment of expenditures by private primary and secondary schools illustrates the point. The INES definitions include expenditures by both public and private schools in total expenditures for primary and secondary education; the U.S., on the other hand, does not include expenditures by private schools in national reports on education expenditures. Omission of these expenditures in U.S. practice is based not on the belief that private school expenditures do not belong in national data. Rather it results from the fact that no government or private agency regularly collects data on private school expenditures.

Because the INES definitions and U.S. practice were in agreement on many points, we decided to use a single operational definition for adjusting countries' expenditure data. There was, however, one important difference between the INES definitions and U.S. practice that needed to be considered in the comparability adjustments, namely the distinction between primary-secondary education and K-12 education. In the INES definitions, primary education begins in grade 1 (which is usually the first year of compulsory schooling); all education below this grade is considered preprimary education. In U.S. practice, the K-12 sector typically begins with kindergarten, the year preceding the start of compulsory education; all education preceding kindergarten is classified as pre-K education.[2] In conducting the empirical work of the

[2]Some school districts also provide pre-K classes in their elementary schools. However, since the more common practice is for schools to begin with kindergarten, expenditures for these classes will also be classified as pre-K education in U.S. practice.

comparability study we used the INES definition of primary-secondary education as the primary basis for adjusting expenditures.[3]

Exhibit I-1 presents the operational definition of expenditures used in this study to adjust countries' expenditure data, along with a comparison of definitions used by the OECD in the INES Project and the definitions of expenditures found in U.S. practice. In areas where INES definitions and U.S. practice were congruent, we adopted the definitions used by both; in areas of difference we tended to use the definition that defined the sector more inclusively and to try to estimate expenditures for the sector if country data were not available. However, in some cases we excluded certain education sectors from the operational definition because very few countries could provide the relevant data. This was the case with the private, non-collegiate postsecondary education sector.

Selection of a Database for Analysis

The databases from two major international collections of finance data were considered as the database for the empirical analysis of expenditure comparability. These were: (1) the finance tables in the OECD/UNESCO/Eurostat joint finance collection (UOC2); and (2) the expenditure tables in the OECD's INES project collection (EXP1 and EXP2). The OECD's INES database was selected as the database for several reasons. First, it contained expenditure data for the most current year available [data for the 1990-91 school year collected for the second edition of *Education at a Glance (EAG2)*]. Second, the data in the INES database had been subjected to intensive scrutiny both by the OECD Secretariat and by countries participating in the INES

[3]Preliminary adjustments were also made in several countries using K-12 education as the operational definition of expenditures to assess the effects of these adjustments to preprimary and primary-secondary education. The adjustments had only small effects on expenditures for primary-secondary education, since kindergarten classes represented only a small proportion of K-12 expenditures. Conversely, adjustments had much more significant effects on preprimary education because kindergarten classes comprised a large share of preprimary expenditures.

EXHIBIT I-1

Comparison of the Operational Definition of Expenditures Used in This Study with U.S. Practice and INES Definitions

Preprimary Education	U.S. Practice	INES Definitions of Expenditures for *EAG2*	Operational Definitions of Expenditures Used in This Study
Definition of sector	Not included in published data on expenditures; kindergarten and pre-kindergarten programs provided by school districts included in primary-secondary education; expenditures for preschools and day care centers are not part of a regular statistical collection.	All center-based programs that provide preschool education and child development activities included, i.e., preschools; nursery schools and child care centers; kindergarten and pre-kindergarten classes offered in primary schools.	All center-based programs that provide preschool education and child development activities included; includes preschools, nursery schools and child care centers, along with kindergarten and pre-kindergarten classes offered in primary schools.
Scope of activity	Sector is not included in education expenditures.	Expenditures for developmental and instructional activities, building construction and maintenance, transportation, and support services included.	Expenditures for developmental and instructional activities, building construction and maintenance, transportation, and support services included.
Age of students served	Sector is not included in education expenditures.	Children age 3 and older in all countries included, but countries permitted to include 2-year-olds if they are served in the preschool system.	Children age 3 and older included.
Primary-Secondary Education	**U.S. Practice**	**INES Definitions of Expenditures for *EAG2***	**Operational Definitions of Expenditures Used in This Study**
Definition of sector and grade structure	All kindergarten plus pre-kindergarten through grade 12 provided by Local Education Authorities.	All schooling before the first year of compulsory schooling, including kindergarten, excluded from primary-secondary education based on ISCED classification.	All schooling below the first year of compulsory schooling, including kindergarten, excluded.
Private schools	Included in principle, but no collection exists to produce data.	All government and private expenditures included.	All expenditures on and by private schools included.
Proprietary schools, such as Japanese jukus and test preparation centers in the U.S. and Europe	Not included and no data collected.	Not included and no plans to include.	Excluded from definition of expenditures.
Apprenticeships	Public expenditures by schools included; private expenditures by businesses to train apprentices excluded.	All public expenditures and private expenditures by businesses to train apprentices included. (Definition of private expenditures requires clarification.)	All public and private expenditures for youth (i.e., student) apprenticeships included, subtracting out amount that represents compensation of the apprentices.
Adult education	Expenditures provided in primary and secondary schools are included in K-12 expenditures. (Sector is very small in relation to secondary education.) Other expenditures for adult education are excluded.	Excluded from expenditures, but included in some countries' data if separation is not possible. (Definition of adult education not specified.)	Included only if it is part of the formal education system, with a curriculum similar to that in regular schooling. (Recreational courses excluded.)
State and federal ministries and departments of education	Included in principle, but expenditures are not usually included in national reports.	Included in expenditures.	All expenditures of education agencies that are related to education included.
Education expenditures of general governments (counties, cities, regional entities)	Included in expenditures, but level is very small, since school districts provide most educational services.	Included in expenditures.	Expenditures for administration and support functions included; expenditures for their in-service staff training excluded.

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EXHIBIT I-1 (Continued)

Comparison of the Operational Definition of Expenditures Used in This Study with U.S. Practice and INES Definitions

Primary-Secondary Education	U.S. Practice	INES Definitions of Expenditures for *EAG2*	Operational Definition of Expenditures Used in This Study
Direct household expenditures for books, supplies, materials	Excluded from expenditures.	Definition is ambiguous; expenditures are included by some countries, excluded by others.	Excluded from expenditures.
Transportation	Included in expenditures. Fees not excluded from total.	Included in expenditures. Fees not excluded from total.	Included in expenditures; fees included in total.
Food services	Included in expenditures. Fees not excluded from total.	Definition is unclear.	Included in expenditures; fees included in total.
Auxiliary enterprises	Included in expenditures. Fees not excluded from total.	Definition is unclear.	Included in expenditures; fees included in total.
Health, guidance, psychological services	Included in expenditures.	Included in expenditures, but not included in some countries' submissions.	Included in expenditures.
School libraries	Included in expenditures.	Included in expenditures.	Included in expenditures.
Community services	Excluded from current expenditures, included in total expenditures.	Excluded from expenditures.	Excluded from expenditures.
Retirement, social security, workers' compensation, health and disability insurance	Included in current and total expenditures as employers' contributions. (Data may not always be available from all states.)	Included in expenditures, but method of calculation is not specified.	Included in expenditures.
Tertiary Education	**U.S. Practice**	**INES Definitions of Expenditures for *EAG2***	**Operational Definition of Expenditures Used in This Study**
Private for-profit occupational or trade schools	Included in principle, but excluded from national reports because expenditure data are not collected.	Included in principle, but many countries do not collect and report data for this sector.	Excluded from expenditures, primarily because many countries cannot provide the data.
Adult education	Included in expenditures of postsecondary institutions since institutions cannot separate credit from non-credit courses. Expenditures for adult education outside higher education institutions excluded.	Excluded from expenditures, but some countries include expenditures because adult education cannot be separated from other programs.	Included only if it is part of the formal education system, with a curriculum similar to that in regular schooling; job training or recreational courses excluded.
State and federal education agencies, ministries and departments of education	Included in principle, but expenditures are not usually included in national reports.	Included in principle, but reporting practices vary across countries.	All expenditures of education agencies that are related to education included.
Education expenditures of general governments (counties, cities, regional entities)	Included in principle, but U.S. data only include expenditures by educational institutions.	Included in expenditures, but most countries do not collect and report data for these institutions.	Expenditures for administration and support services included; expenditures for in-service staff training excluded.
Financial aid and students' living expenses	Estimates of financial aid for tuition included, but estimates of aid for students' living expenses excluded.	Financial aid for tuition included; aid for students' living expenses excluded.	All financial aid, including aid for students' living expenses, excluded.
Student loans	Estimates of financial aid for tuition included, but estimates of aid for students' living expenses excluded.	Definition is unclear; most countries do not report expenditures for student loans.	Expenditures for student loans excluded.

EXHIBIT I-1 (Continued)

Comparison of the Operational Definition of Expenditures Used in This Study with U.S. Practice and INES Definitions

Tertiary Education	U.S. Practice	INES Definitions of Expenditures for *EAG2*	Operational Definition of Expenditures Used in This Study
Research	Research conducted at universities included; expenditures by U.S. national laboratories excluded.	Research excluded from expenditures; most countries include all expenditures for faculty salaries as expenditures for education.	Research conducted at universities included; research at other research centers excluded.
Capital expenditures	Included as increases in capital assets rather than as capital expenditures.	Included in expenditures, but definition is unclear.	Included in expenditures.
Debt service	Expenditures for interest payments included; payments for redemption of principal excluded.	Included in expenditures.	Repayment of principal and interest excluded from expenditures.
Dormitories and dining halls	Excluded from expenditures.	Included in expenditures.	Excluded from expenditures.
Support services (e.g. health, psychological, vocational counseling)	Included in expenditures.	Included in expenditures.	Included in expenditures.
Retirement, social security, workers' compensation, health and disability insurance	Included in expenditures as employers' contributions to retirement and other social service systems.	Included in expenditures, but calculations are not clearly specified.	Included in expenditures.
Enterprises (e.g., athletics, book stores, etc.)	Included in expenditures.	Excluded from expenditures.	Excluded from expenditures.
University hospitals	Included in expenditures.	Not clear from instructions whether included in or excluded from expenditures; included by some countries, not by others.	Excluded from expenditures.

Note: Public subsidies for students' living expenses were excluded from expenditures. However, these subsidies represent a substantial contribution to education in some countries and could affect countries' values on key finance indicators, if included in expenditures.

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Project. The problems and ambiguities in the INES definitions had been discussed extensively in several meetings of the Project's Technical Group and were therefore quite well known. Third, to support NCES's interest in working collaboratively with the INES Project and in improving the quality and comparability of the INES finance collection, we had structured our preliminary analyses of countries' comparability problems around the finance data countries had submitted to OECD for the first edition of *Education at a Glance (EAG1)*. The empirical analysis was designed to complement this descriptive discussion of comparability problems with an assessment of the quantitative impact of countries' deviations from the INES definitions of expenditures.

Review of Countries' National Finance Data

At the outset of this study, we recognized several problems that might limit our ability to conduct a complete quantitative analysis of the deviations from comparability in participating countries. These included: (1) incomplete information about all pertinent aspects of each country's education structures, finance arrangements, and data collections; (2) lack of access to data required for the comparability analysis; and (3) "missing" data in countries' national data collections. The first problem would preclude us from fully documenting and describing potential deviations from comparability; the second two problems would limit our ability to quantify the magnitude of these deviations and, in some cases, might actually preclude us from carrying out the quantitative analysis altogether.

We attempted to address these problems through reviews of published reports and unpublished documents, correspondence and telephone communication with country officials, extensive interviews conducted on site in each country, and follow-up communication to clarify comparability problems. During our field visits and follow-up conversations, we also attempted to obtain as much additional material as possible on expenditures, e.g., computer printouts, special tabulations, etc., to conduct the comparability analysis. By and large, we succeeded in obtaining

data to fill in many of the major data gaps. However, some gaps still could not be filled, primarily because the data required to fill the gaps do not exist in countries' finance records. As a result, some comparability problems identified in Volume I of this report could not be corrected in the quantitative analysis. Other "missing data" problems were addressed through "best guess" estimates based on information provided by country officials. In most cases, ranges were established within which values for a particular expenditure could reasonably be expected to fall.

One final point concerning adjustments to countries' expenditure data must be stated before presenting the adjustments and their consequences. This concerns the limitations of the adjustments. Despite fairly intensive scrutiny of the 10 countries' education structures, finance arrangements, national statistical collections, and data submitted to international agencies, our knowledge about comparability problems is not complete for all countries. As a result, there may still be problems requiring adjustments that were not incorporated into our analysis. In addition to incomplete knowledge, there are also a number of other important limitations to our adjustments to countries' expenditure data.

First, there are some areas of education in different countries where we know about a comparability problem but have been able neither to identify data sources that would provide data on actual expenditures nor to obtain adequate information from knowledgeable people to estimate expenditures for a function or activity. Second, some adjustments to countries' expenditures are incomplete and fairly primitive, i.e., in many cases based on very rough estimates of actual expenditures for particular items. Although we attempted to provide low and high estimates of expenditures based on information provided by country officials to establish a range of expenditures for many "missing" items, we do not know how much the estimates deviate from actual expenditures. Third, our adjusted estimates of expenditures per student include only crude adjustments to student counts in countries where they were required, since it was beyond the

scope of the study to address fully problems of comparability in student enrollments; more accurate adjustments of student counts could change the estimates of expenditures per student presented here. Finally, our analysis of the effects of adjustments to countries' expenditures was limited to only two indicators that reflect countries' overall investment in education: expenditures relative to gross domestic product (GDP) and expenditures per student. We did not analyze the effects of adjustments on relative expenditures for different education levels, the composition of expenditures, and the sources of funding for education — in part because of the "crudeness" of the adjustments to countries' expenditures. Better adjustments to the data might permit an analysis of other education finance indicators.

CHAPTER II

ADJUSTMENT OF DATA ON PUBLIC AND PRIVATE EXPENDITURES TO IMPROVE COMPARABILITY

Introduction

This chapter presents the adjustments made to each country's data on *public and private expenditures* to improve comparability. It is organized by country, beginning with Australia and concluding with the United States. Discussed below are the procedures used to adjust the expenditure data and the way the adjustments are presented.

Each country section focuses first on comparability problems relating to *total public and private expenditures for all education levels from preprimary through tertiary education combined*. The first exhibit for each country summarizes the major comparability problems at each education level and the adjustments carried out to try to address them.[1] Data sources for the adjustments and general descriptions of calculation methods are presented in this exhibit. The second exhibit presents the actual adjustments to each country's expenditures (in local currency) and the amount of money that was added to or subtracted from the total public and private expenditures for all education levels reported to OECD for EAG2. The adjustments presented in this exhibit only include additions to and subtractions from expenditures; they do not include transfers between levels of education and allocation of expenditures that countries do not account for by level ("undistributed" expenditures) to appropriate education levels, since these interlevel transfers do not affect total expenditures for all education levels combined.

[1] In a few cases, adjustments were not carried out because the required data were not available.

As one of the main purposes of the adjustments to countries' expenditures was to establish a *possible range* for total public and private expenditures for education, low and high estimates of expenditures were developed for each country. To establish the largest possible range, the low estimate was developed with the minimum potential value for expenditures and the high estimate was developed with the maximum potential value. When more than one estimate could be made of a missing item or an incorrect expenditure figure, this was done as follows. If an item needed to be added to expenditures, the *low estimate* was established by *adding the smallest estimate of expenditures* for an education function or activity; if an item needed to be subtracted from expenditures, the low estimate was established by *subtracting the highest estimate of expenditures* for that function or activity. Conversely, under the *high estimate*, if an item needed to be added to expenditures, the *largest estimate of expenditures* was *added* to reported expenditures; if an item needed to be subtracted from expenditures, the *smallest* estimate was subtracted.

The low and high estimates of *total public and private expenditures for all education levels combined* are presented at the bottom of the exhibit containing the numerical adjustments to expenditures. The estimates of expenditures presented here are the ones used later in Chapter IV to assess the effects of expenditure adjustments on indicators of total expenditures for preprimary through tertiary education.

The second part of each country section presents *adjustments to three separate education levels: preprimary education, primary-secondary education, and tertiary education*. The adjustments to expenditures — presented in the third exhibit in each country section — include three components: (1) additions to and subtractions from expenditures included in adjustments to total expenditures for all education levels; (2) transfers of expenditures between education levels ("interlevel transfers") to adjust for incorrect accounting of expenditures by education level; and (3) allocations of "undistributed" expenditures to appropriate education levels. Again, since a

major purpose of the adjustments was to establish a *possible range* of expenditures for *each education level*, low and high estimates of expenditures were made, using the same procedures described above for expenditures for all education levels. The low estimate was made by adding the smallest potential value for an item and subtracting the largest potential value, while the high estimate was made by adding the largest potential value and subtracting the smallest potential value of that item.

One important point should, however, be noted regarding transfers between education levels. To create low and high estimates of expenditures for each education level, different amounts had to be transferred across education levels under the low and high estimates. The example in the figure below illustrates this point and how the low and high estimates were developed. In this example expenditures for kindergarten classes in primary schools had to be transferred from primary-secondary education to preprimary education. The range of expenditures was estimated to be 300 to 500 million. To create the *low value* for primary-secondary education, the *maximum estimate* of 500 million had to be *subtracted* from this level; to create the *high value*, the *minimum estimate* of 300 million had to be *subtracted* from primary-secondary education. However, the opposite additions were required for preprimary education. To create the *low* value for preprimary education, the *minimum* estimate of 300 million had to be *added* to this level; to create the *high* value, the *maximum* estimate of 500 million had to be *added* to preprimary education.

EXHIBIT II-1

Procedures for Transferring Expenditures between Education Levels

Level of Education	Low Adjustment (Millions)	High Adjustment (Millions)
Preprimary Education		
Addition of Expenditures for Kindergarten Classes in Primary Schools	+300	+500
Primary-Secondary Education		
Transfer of Expenditures for Kindergarten Classes into Preprimary Education	-500	-300

The fourth exhibit in each country section presents the low and high estimates of total expenditures for each education level. The exhibit also shows the amount of "undistributed" expenditures before adjustments and estimates of expenditures after the allocation of "undistributed" expenditures to appropriate education levels. The exhibits do not include low and high estimates of expenditures for all education levels combined based on the sums of estimates for the respective levels, as these sums will generally differ from the estimates of total expenditures for all education levels presented in the second exhibit (due to the treatment of interlevel transfers). In comparing total expenditures for all education levels before and after expenditures adjustments, the reader should not sum the figures reported in the fourth exhibit, but should use the estimates reported in the second exhibit.

Australia

Australia's expenditure data submitted to INES for *EAG2* were drawn primarily from institutional collections carried out by several different government offices and private agencies. Each of the agencies used different instruments to collect the finance data for its respective education sector. As a result, the data reported for primary and secondary education are not fully comparable with the data reported for technical and further education or university education. Some education activities and objects of expenditure are included in some collections but are excluded from others. In addition, the fiscal years were not comparable in all of the collections. Expenditure data for primary and secondary education in government schools and technical and further education were for fiscal years (July 1-June 30), while data for primary and secondary education in non-government schools and for universities were for calendar years.

Our review of these collections and the expenditure data Australia submitted to INES for *EAG2* identified two main types of problems: omission of certain expenditures from national totals and computational errors in completing the submission form. Expenditures were generally omitted from the INES submission for either of the following reasons. One is that government agencies do not collect data for certain types of expenditures, e.g., private expenditures for both preschool education and primary and secondary education in government schools. The second is that expenditure data are not consistent across states: some states include certain expenditures, e.g., retirement expenditures, in their finance data, while others do not. Although national agencies attempt to standardize expenditures to the extent possible to report comparable data in national reports, in some cases they exclude certain expenditures from state and national totals if comparable state data cannot be generated. In conducting the quantitative analysis of comparability for Australia, we attempted to develop estimates of omitted expenditures based on

information obtained through our field visits and subsequent inquiry. We also adjusted Australia's expenditure figures to eliminate computational errors in the submission.

Exhibits II-2, II-3a and II-4a summarize Australia's major comparability problems by education level and the actual adjustments made to Australia's expenditure data (in local currency) to address these problems. In cases where data are missing, low and high estimates of actual expenditures are made to provide a potential range in values for the missing expenditures. Exhibits II-3b provides an overall picture of the effects of the adjustments to Australia's expenditures for all education levels; Exhibit II-4b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, public and private expenditures for all levels of education combined were estimated to increase between 5 and 10 percent. By level, the largest percentage increase was in preprimary education; this was due primarily to the allocation of pre-year-1 expenditures from primary education to preprimary education and secondarily to a correction of an error in the data submission. However, expenditures for preprimary education still exclude public and private expenditures for child care programs and private expenditures for pre-school programs. The addition of these expenditures would substantially increase expenditures for preprimary education.

Expenditures for primary and secondary education were estimated to increase between 4 and 13 percent, with the inclusion of an estimate of TAFE expenditures for basic education and employment skills in this sector and the exclusion of expenditures for pre-year-1 classes from primary schools.

Estimates of tertiary education expenditures after adjustments were basically unchanged from reported expenditures. TAFE expenditures for other operating expenditures, which were omitted from the INES submission, were added to current expenditures and total expenditures, but the addition of these expenditures to tertiary education was offset by the transfer of estimated

EXHIBIT II-2

Summary of Comparability Problems and Adjustments to Australia's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of public and private expenditures for child care centers.	• No adjustment: data unavailable to estimate expenditures.
	• Omission of private expenditures for preschool education.	• No adjustment: data unavailable to estimate expenditures.
	• Exclusion of expenditures for pre-year-1 (kindergarten) classes in public and private primary schools from preprimary education.	• Expenditures allocated to preprimary education based on preprimary share of primary school enrollments in each state. Low Estimate: One-tenth of primary education expenditures. High Estimate: Between one-seventh and one-eighth of primary education expenditures.
Primary-Secondary Education	• Exclusion of expenditures for fringe benefits such as health insurance, retirement (superannuation), payroll tax, long service leave by government (public) schools.	• Expenditures for retirement and workmen's compensation estimated to be between 10% and 15% of salaries, health insurance at between 1% and 5% of salaries.
	• Exclusion of expenditures by local governments for government schools.	• Expenditures of $1 million from Australian Bureau of Statistics (ABS) national accounts data added to current and total expenditures.
	• Exclusion of expenditures by schools, school councils, and community organizations for government schools.	• Estimated expenditures are between 1% and 5% of current expenditures of government schools.
	• Exclusion of expenditures for transportation by non-government (private) schools.	• Estimated expenditures are between 1% and 5% of current expenditures of non-government schools.
	• Inclusion of expenditures for debt service by non-government schools in current expenditures.	• Expenditure removed from current and total expenditures.
	• Inclusion of expenditures for pre-year-1 (kindergarten) classes in public and private primary schools in primary education.	• Expenditures removed from primary/secondary education and included in preprimary education. Low Estimate: Between one-seventh and one-eighth of primary education expenditures. High Estimate: One-tenth of primary education expenditures.
	• Exclusion of Technical and Further Education (TAFE) expenditures for basic education and basic employment skills from secondary education.	• 15% of TAFE expenditures allocated to primary/secondary education based on share of TAFE enrollments in basic education and employment skills courses.
Tertiary Education	• Inclusion of other operating expenditures by TAFE institutions as capital expenditures, instead of current expenditures.	• Other operating expenditures in report of Task Force on Finance Data for Vocational Education and Training added to current operating expenditures and total expenditures.
	• Inclusion of **all** TAFE expenditures, including basic education and employment skills, in tertiary education (ISCED 5).	• 15% of TAFE expenditures excluded from tertiary education and included in primary/secondary education.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-3a

Adjustment of Australia's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Australian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
ABS Expenditure Data Adjusted to Correspond with Printouts	+22	+22
Primary-Secondary Education		
Estimate of Expenditures for Retirement and Workmen's Compensation in Government Schools Added to Expenditures	+649	+973
Estimate of Expenditures for Health Insurance in Government Schools Added to Expenditures	+65	+324
ABS Expenditures by Local Governments Added to Expenditures	+1	+1
Estimate of Expenditures by Community Organizations, School Councils for Government Schools Added to Expenditures	+88	+439
Estimate of Expenditures for Transportation in Non-Government Schools Added to Expenditures	+30	+149
Expenditures for Debt Service in Non-Government Schools Accounted for in Current Expenditures Removed from Expenditures	-138	-138
Tertiary Education		
Addition of TAFE Other Operating Expenditures to Expenditures	+345	+345
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+1,062	+2,115

EXHIBIT II-3b

Summary of Adjustments to Australia's Data on Total Public and Private Expenditures for All Education Levels Combined (Australian Dollars, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	20,741	21,803	+5.1%	22,856	+10.2%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-4a

Adjustment of Australia's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Australian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+22	+22
Interlevel Transfers		
Estimate of Expenditures for Pre-Year-1 (Kindergarten) Classes in Government Schools Allocated Based on Share of Primary Enrollment in the States	+324	+454
Estimate of Expenditures for Pre-Year-1 (Kindergarten) Classes in Non-Government Schools Allocated Based on Share of Primary Enrollment in the States	+71	+101
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+417	+577
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+695	+1,748
Interlevel Transfers		
Estimate of Expenditures for Pre-Year-1 (Kindergarten) Classes Subtracted Based on Share of Primary Enrollment in the States	-454	-324
Estimate of Expenditures for Pre-Year-1 (Kindergarten) Classes Subtracted Based on Share of Primary Enrollment in the States	-101	-71
Estimate of TAFE Expenditures for Basic Education and Employment Skills Added to Expenditures	+397	+397
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	+537	+1,750
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+345	+345
Interlevel Transfers		
Estimate of TAFE Expenditures for Basic Education and Employment Skills Transferred to Primary-Secondary Education	-397	-397
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-52	-52

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-4b

Summary of Adjustments to Australia's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Australian Dollars, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	219	636	+190.4%	796	+263.5%
Primary-Secondary Education					
Total Expenditures	13,077	13,614	+4.1%	14,827	+13.4%
Tertiary Education					
Total Expenditures	7,445	7,393	-0.7%	7,393	-0.7%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

TAFE expenditures for basic education and employment skills out of tertiary education into primary and secondary education.

Austria

Our review of Austria's expenditure data identified three major problems. These were the omission of substantial expenditures from all levels of education, the inclusion of expenditures for university hospitals in tertiary education, and the inclusion of about 7 percent of total expenditures as "unallocated" expenditures. The most significant omissions from expenditures included private expenditures for all levels of education and public expenditures for retirement benefits (pensions) for civil servants employed in education. The omission of expenditures by private firms for training apprentices under the dual system was also a significant omission from secondary education.

The comparability problems with Austria's expenditure data were addressed largely through the addition of estimates of expenditures to all three education levels. These additions included estimates of public expenditures for pensions for civil servants (between 8 and 12 percent of expenditures reported to OECD) and private expenditures for fees at public and private institutions (between 3 and 4 percent of reported expenditures). In addition, estimated expenditures by Länder and local authorities for administration and support services were included in preprimary and primary-secondary education, public expenditures for adult education were included in secondary education, and private firms' expenditures for apprenticeship training were included in secondary education. Expenditures for university hospitals (representing about 4 percent of total reported expenditures and about 18 percent of reported expenditures for tertiary education) were subtracted from expenditures.

Exhibits II-5, II-6a and II-7a summarize expenditure comparability problems by education level and the adjustments made to Austria's expenditure data to address these problems of comparability. Exhibit II-6b provides an overall picture of the effects of the adjustments to

Austria's expenditures for all education levels; Exhibit II-7b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, estimates of total public and private expenditures for all education levels combined were between 19 and 26 percent higher than reported expenditures — primarily because the large number of additions to expenditures more than offset the subtraction of expenditures for university hospitals from tertiary education. The adjustment of Austria's expenditure data produced an increase in expenditures for both preprimary education and primary-secondary education, but a decrease in expenditures for tertiary education.

Estimated expenditures for preprimary education increased between 35 and 54 percent — with the addition of private expenditures for private education contributing the major share of the increase. Estimated expenditures for primary-secondary education increased between 39 and 48 percent; the addition of estimated expenditures by private firms for training apprentices under the dual system and estimated public expenditures for pensions for civil servants contributed most to the increase in expenditures for this education level, but these increases were partially offset by decreases in expenditures for subsidies for student living expenses. Finally, expenditures for tertiary education were estimated to decrease between 10 and 12 percent. Estimated additions to tertiary education of public expenditures for pensions for civil servants, private expenditures (fees) at public institutions, and selected expenditures from "unallocated" expenditures were more than offset by the subtraction of expenditures for university hospitals and subsidies for student living expenses from tertiary education.

EXHIBIT II-5

Summary of Comparability Problems and Adjustments to Austria's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of expenditures for civil service pensions.	• Estimated expenditures are between 16% and 20% of gross salaries for civil servants.
	• Omission of private expenditures (fees) for public institutions.	• Estimates added to expenditures based on data provided by the Austrian Central Statistical Office (ACSO).
	• Omission of private expenditures for private schools.	• Expenditures for preprimary education are estimated at 80% to 110% of expenditures in public schools.
	• Omission of expenditures for administrative and support functions performed by Länder and local governments.	• Estimated expenditures are between 2% and 5% of total expenditures.
Primary-Secondary Education	• Omission of expenditures for civil service pensions.	• Estimated expenditures are between 16% and 20% of gross salaries of civil servants.
	• Omission of expenditures by private firms for training of apprentices.	• Estimate of 9.1 billion Austrian Schillings (AS) based on special study added to expenditures.
	• Omission of private expenditures (fees) for public institutions.	• Estimates added to expenditures based on data provided by the ACSO.
	• Omission of some public and all private expenditures for adult education.	• ACSO estimate of 3.25 billion AS added to public expenditures; no estimate of private expenditures available.
	• Omission of private expenditures for private schools.	• Estimated expenditures are based on same expenditure per student as public schools; assumed that private funds cover 10% to 20% of school costs.
	• Omission of expenditures for administrative and support functions performed by Länder and local governments.	• Estimated expenditures are between 2% and 5% of total expenditures.
	• Inclusion of public subsidies for student living expenses.	• Expenditures subtracted based on supplementary data provided by the ACSO.
Tertiary Education	• Omission of expenditures for civil service pensions.	• Estimated expenditures are between 16% and 20% of gross salaries of civil servants.
	• Omission of private expenditures (fees) for public institutions.	• Estimates added to expenditures based on data provided by the ACSO.
	• Inclusion of substantial expenditures for hospitals in tertiary education.	• Expenditures for hospitals in statistics of higher education ministry subtracted from expenditures.
	• Inclusion of public subsidies for student living expenses.	• Expenditures subtracted based on supplementary data provided by the ASCO.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-6a

Adjustment of Austria's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Schillings, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Civil Service Pensions Added to Expenditures	+485	+772
Private Expenditures (Fees) at Public Institutions Added to Expenditures	+292	+292
Private Expenditures for Private Schools Added to Expenditures	+1,409	+2,095
Expenditures for Administrative and Support Functions Performed by Länder and Local Authorities Added to Expenditures	+153	+414
Primary-Secondary Education		
Estimate of Civil Service Pensions Added to Expenditures	+6,669	+9,929
Estimate of Private Firms' Expenditures for Training Apprentices under the Dual System Added to Expenditures	+9,100	+9,100
Private Expenditures (Fees) at Public Institutions Added to Expenditures	+543	+543
Public Expenditures for Adult Education Added to Expenditures	+3,250	+3,250
Private Expenditures for Private Schools Added to Expenditures	+633	+1,266
Expenditures for Administrative and Support Functions Performed by Länder and Local Authorities Added to Expenditures	+1,602	+4,037
Expenditures for Subsidies for Student Living Expenses Subtracted from Expenditures	-1,538	-1,538
Tertiary Education		
Estimate of Civil Service Pensions Added to Expenditures	+1,035	+1,478
Private Expenditures (Fees) at Public Institutions Added to Expenditures	+226	+226
Expenditures for Hospitals Subtracted from Expenditures	-3,773	-3,773
Expenditures for Subsidies for Student Living Expenses Subtracted from Expenditures	-988	-988
Unallocated Expenditures		
Private Expenditures (Fees) at Public Institutions Added to Expenditures	+158	+158
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+19,256	+27,261

EXHIBIT II-6b

Summary of Adjustments to Austria's Data on Total Public and Private Expenditures for All Education Levels Combined (Schillings, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	104,080	123,336	+18.5%	131,341	+26.2%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-7a

Adjustment of Austria's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Schillings, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+2,339	+3,573
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+2,339	+3,573
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+20,259	+26,587
Interlevel Transfers		
Special Education Expenditures Transferred from Unallocated Expenditures	+833	+833
Estimated Two-Thirds of Expenditures for Other Types of Education Transferred from Unallocated Expenditures	+347	+347
Textbook Expenditures Transferred from Unallocated Expenditures	+1,029	+1,029
Scholarship Expenditures Transferred from Unallocated Expenditures	+1,068	+1,068
Estimate of 80 Percent of Other Unallocated Expenditures Added to Expenditures	+3,002	+3,002
Private Expenditures (Fees) Added to Expenditures	+126	+126
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	+26,664	+32,992
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-3,500	-3,057
Interlevel Transfers		
Estimated One-Third of Expenditures for Other Types of Education Transferred from Unallocated Expenditures	+173	+173
Estimate of 20 Percent of Other Unallocated Expenditures Added to Expenditures	+751	+751
Private Expenditures (Fees) Added to Expenditures	+32	+32
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-2,544	-2,101

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-7b

Summary of Adjustments to Austria's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Schillings, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	6,630	8,969	+35.3%	10,202	+53.9%
Primary-Secondary Education					
Total Expenditures	68,292	94,956	+39.0%	101,285	+48.3%
Tertiary Education					
Total Expenditures	21,954	19,410	-11.6%	19,853	-9.6%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	7,203	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

Canada

Canada's expenditure data submitted to INES for *EAG2* were drawn from several collections including provincial records of expenditures of public primary and secondary schools, surveys of private primary and secondary schools, and surveys of postsecondary vocational-technical and community colleges and universities. There are some differences in definitions used in these collections, but these do not greatly affect the comparability of data across education sectors. There are also differences across provincial collections of expenditure data for public primary and secondary schools, but these are coordinated to the extent possible by adjustment of data by Statistics Canada to a national standard.

Canada did not report expenditures on center-based day care in its INES submission, as day care institutions are not part of a regular data collection. However, for the comparability study, estimated expenditures for center-based day care were added to preprimary education drawing on data from a report on day care prepared by the New Democratic Party and the University of Toronto.

Our review of Canada's expenditure data identified a number of important comparability problems. One problem was a difference in the boundary between secondary and tertiary education between Québec and other provinces. Unlike other provinces, which generally operate K-12 education systems, Québec operates a K-11 system. Students enter one of two postsecondary programs in grade 12: a two-year academic program providing preparation for university; or a three-year vocational program. Canada counts all expenditures for these programs, including those for grade 12, as tertiary education, even though the level of instruction in grade 12 is similar to grade 12 instruction in the other provinces. In conducting the comparability analysis, we respected Canada's own classification of education levels. However, if a uniform grade structure were imposed on levels of education, by country, Canada's expenditures

would be reduced substantially at the tertiary level and increased at the secondary level, as Québec contains more than a quarter of Canada's population.

Other problems involved the inclusion and/or exclusion of certain expenditures in national totals. To address these problems, three general adjustments were made to Canada's expenditure data: (1) addition of missing data; (2) subtraction of expenditures for education sectors or activities not included in our operational definition of expenditures; and (3) proration of expenditures across education levels. The only addition to expenditures was the inclusion of public and private expenditures for center-based child care to preprimary education. The most significant subtractions from expenditures were the elimination of estimated household expenditures on books and supplies from primary-secondary education, the exclusion of public expenditures for in-service training in public agencies, and the elimination from tertiary education of grants to higher education students that support student living expenses (which are excluded from our operational definition of expenditures) or tuition and fees (which are already accounted for as revenues by colleges and universities).

Several other items were also excluded from Canada's expenditures. These included expenditures for private non-collegiate tertiary education (proprietary schools), which would have been retained in tertiary education based on the INES definitions. We subtracted these expenditures for this study because data for programs that operate outside the "formal" education system were not available — and could not be estimated — for several countries. Other "non-formal" programs excluded from expenditures were prison education and in-service training programs provided in non-education government agencies. Finally, we subtracted out public expenditures on tertiary-level scholarships and grants to avoid double-counting of grants that return to institutions as tuition and fees and to eliminate public expenditures that support student living expenses.

Exhibits II-8, II-9a and II-10a summarize expenditure comparability problems by education level and the adjustments made to Canada's expenditure data to address these problems of comparability. Exhibit II-9b provides an overall picture of the effects of the adjustments to Canada's expenditures for all education levels; Exhibit II-10b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, estimates of total public and private expenditures for all education levels combined were only slightly lower (1-2 percent) than reported expenditures — primarily because additions to expenditures were more than offset by the subtraction of other expenditures. Increases in preprimary education were counterbalanced by decreases in both primary-secondary and tertiary education.

Estimated expenditures for preprimary education increased substantially in monetary terms for two reasons: (1) estimated expenditures for kindergarten and pre-kindergarten classes in primary schools were transferred from primary-secondary education to preprimary education; and (2) estimated expenditures of about $1.5 billion for "center-based" day care and nursery schools were included in preprimary expenditures.

Expenditures for primary-secondary education were estimated to decline overall by about 7 percent. This reduction resulted from two adjustments: (1) the transfer of expenditures for kindergarten and pre-kindergarten classes into preprimary education; and (2) the subtraction of household expenditures for books and supplies from total expenditures (since these were not part of the operational definition of expenditures used in this study). The several reductions in tertiary expenditures mentioned above decreased tertiary expenditures by an estimated 9 percent.

EXHIBIT II-8

Summary of Comparability Problems and Adjustments to Canada's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of public and private expenditures for child care centers.	• Federal, provincial, and private expenditures on center-based child care from survey conducted by the New Democratic Party and the University of Toronto added to expenditures.
	• Exclusion of expenditures for kindergarten and pre-kindergarten classes in public and private schools from preprimary education.	• Estimated public and private expenditures for kindergarten and pre-kindergarten classes allocated to preprimary education based on enrollments and pupil-teacher ratios published in the Canadian "Education-at-a-Glance" report added to expenditure.
Primary-Secondary Education	• Inclusion of education programs in federal prisons.	• Line item expenditure for prison education found in the 1988-1989 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.
	• Inclusion of expenditures for kindergarten and pre-kindergarten classes in public and private schools in primary and secondary education.	• Estimated public and private expenditures for kindergarten and pre-kindergarten classes based on enrollments and pupil-teacher ratios published in the Canadian "Education-at-a-Glance" report subtracted from expenditures.
	• Inclusion of household expenditures on student books and supplies, which are not part of the operational definition of expenditures used in this study.	• Estimate of household expenditures found in *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.

EXHIBIT II-8 (Continued)

Summary of Comparability Problems and Adjustments to Canada's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Tertiary Education	• Inclusion of some expenditures for proprietary schools.	• Line item expenditure on proprietary schools found in the 1988-1989 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.
	• Inclusion of expenditures for in-service training programs in public agencies.	• Expenditures of public agencies for in-service training found in the 1988-1989 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.
	• Inclusion of university expenditures for local property taxes.	• Expenditures for local property taxes found in the 1988-1989 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.
	• Inclusion of government expenditures for scholarships at universities.	• 100% of university scholarships found in 1988-89 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from tertiary expenditures.
	• Inclusion of government expenditures for scholarships at community colleges.	• 100% of community college scholarships found in 1988-89 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from tertiary expenditures.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-9a

Adjustment of Canada's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Canadian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Expenditures for Private "Center-Based" Child Care Added to Expenditures	+626	+692
Estimate of Expenditures for Public "Center-Based" Child Care Added Expenditures	+742	+820
Primary-Secondary Education		
Expenditures for Prison Education Programs Subtracted from Expenditures	-17	-17
Estimated Household Expenditures on Books and Supplies Subtracted from Expenditures	-777	-635
Tertiary Education		
Expenditures for Proprietary Schools Subtracted from Private Expenditures	-100	-100
Expenditures for In-Service Training Programs in Public Agencies Subtracted from Expenditures	-457	-457
Local Property Taxes Paid by Universities Subtracted from Expenditures	-21	-21
Estimated Government Expenditures for Scholarships at Universities	-701	-701
Estimated Government Expenditures for Scholarships at Community Colleges	-258	-258
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-963	-677

EXHIBIT II-9b

Summary of Adjustments to Canada's Data on Total Public and Private Expenditures for All Education Levels Combined (Canadian Dollars, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	48,263	47,300	-2.0%	47,586	-1.4%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-10a

Adjustment of Canada's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Canadian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+1,368	+1,512
Interlevel Transfers		
Estimate of Expenditures for Pre-Kindergarten and Kindergarten Classes in Public Primary Schools Allocated to Preprimary Education Based on Enrollments and Pupil-Teacher Ratios	+1,300	+1,436
Estimate of Expenditures for Pre-Kindergarten and Kindergarten Classes in Private Primary Schools Allocated to Preprimary Education Based on Enrollments and Pupil-Teacher Ratios	+100	+110
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+2,768	+3,058
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-794	-652
Interlevel Transfers		
Estimate of Expenditures for Pre-Kindergarten and Kindergarten Classes in Public Primary Schools Transferred to Preprimary Education Based on Enrollment and Pupil-Teacher Ratios	-1,436	-1,300
Estimate of Expenditures for Pre-Kindergarten and Kindergarten Classes in Private Primary Schools Transferred to Preprimary Education Based on Enrollments and Pupil-Teacher Ratios	-110	-100
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-2,340	-2,052
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-1,537	-1,537
Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-1,537	-1,537

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-10b

Summary of Adjustments to Canada's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Canadian Dollars, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	0	2,768	—	3,058	—
Primary-Secondary Education					
Total Expenditures	31,465	29,125	-7.4%	29,413	-6.5%
Tertiary Education					
Total Expenditures	16,798	15,261	-9.1%	15,261	-9.1%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

— Percent change cannot be calculated.

Source: *International Expenditure Comparability Study*, 1997.

France

France's expenditure data submitted to INES for *EAG2* were produced by the Department of Statistics, Studies and Provisions in the Ministry of National Education from consolidated data prepared by the Ministry of Finance, surveys of expenditures by households, accounting records of private firms, and school financial accounts for schools with financial autonomy. Government agencies and other data providers in France use standard accounting practices, thus avoiding problems of internal comparability evident in some other countries.

Our review of France's expenditure data identified four generic types of problems, among them: (1) the omission of certain expenditures from specific education levels; (2) the inclusion of other expenditures that were not part of the operational definition of expenditures used in this study; (3) overestimation of expenditures for pensions of civil servants; and (4) the inclusion of expenditures for special education and a few other programs in "unallocated" expenditures.

To address the first problem, expenditures for adult/continuing education and other out-of-school (extra-scolaire) education were prorated between secondary and tertiary education and added to these sectors. In addition, expenditures by private employers for apprenticeship training were added to secondary education and expenditures for separately budgeted and funded research were added to tertiary education. The second problem was addressed by subtracting selected items from expenditures: household expenditures for education goods and services were subtracted from all education levels; subsidies for student living expenses were prorated and subtracted from secondary and tertiary education; and expenditures by internal training centers to train persons newly hired by firms were subtracted from tertiary education. The third problem was addressed by subtracting an estimate of the excess salary add-on for retirement and family allowances from all education levels. Finally, the problem of "unallocated" expenditures was addressed by prorating special education expenditures to preprimary and primary-secondary education, prorating

other unallocated expenditures to all education levels, and subtracting expenditures for the remuneration of teacher trainees from expenditures.

Exhibits II-11, II-12a and II-13a summarize expenditure comparability problems by education level and the adjustments made to France's expenditure data to address the problems of comparability. Exhibit II-12b provides an overall picture of the effects of the adjustments to France's expenditures for all education levels; Exhibit II-13b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, total expenditures decreased substantially — by about 13 percent under the low estimate and about 6 percent under the high estimate. The addition of substantial expenditures for out-of-school education to secondary and tertiary education and for research to tertiary education was offset by the subtraction of expenditures for internal training from secondary education, household expenditures for goods and services from all levels of education, and the overestimate of the salary add-on for retirement and family allowances for civil servants.

After interlevel transfers were taken into account, expenditures for preprimary education decreased between 15 and 20 percent. The reduction in expenditures was due primarily to the subtraction of estimated expenditures for programs for two-year-olds and the overestimate of the salary add-ons for retirement and family allowances; a contributing factor was the subtraction of household expenditures for education goods and services. Expenditures for primary-secondary education also decreased under the low estimate — because the inclusion of expenditures for out-of-school education and the proration of unallocated expenditures was offset by the subtraction of household expenditures for goods and services, expenditures for internal training of newly hired staff by firms, and the overestimate of expenditures for retirement and family allowances. Finally, expenditures for tertiary education increased 13-26 percent significantly, mainly due to the inclusion of expenditures for out-of-school education and externally funded research.

EXHIBIT II-11

Summary of Comparability Problems and Adjustments to France's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Inclusion of expenditures for programs for 2-year-olds in expenditures.	• Estimated share of expenditures for programs for 2-year-olds based on enrollments subtracted from expenditures.
	• Inclusion of household expenditures for books, supplies, etc.	• Estimated expenditures per pupil from Réperes and Références Statistiques (RRS) data and enrollments subtracted from expenditures.
	• Inclusion of overestimates of pensions to retirees and the full cost of financing the family allowance system in expenditures.	• Estimated portion of retirement add-on of 31.1% of salaries and total family allowances of 6.7% of salaries subtracted from expenditures.
Primary-Secondary Education	• Omission of expenditures for adult education and other extra-scolaire education.	• 80% to 100% of expenditures for extra-scolaire education reported in UOC2 and RRS added to expenditures. Two-thirds included in primary-secondary education.
	• Inclusion of household expenditures for books, supplies, etc.	• Estimated expenditures per pupil from RRS data and enrollments subtracted from expenditures.
	• Inclusion of firms' expenditures for internal training of workers in expenditures.	• Expenditures for internal training in RRS data subtracted from expenditures.
	• Omission of expenditures by private firms for training of apprentices.	• Estimated expenditures per apprentice in 1988 in RRS inflated to 1991 and multiplied by number of apprentices.
	• Inclusion of subsidies for student living expenses in expenditures.	• Expenditures reported in UOC2 subtracted from expenditures.
	• Inclusion of overestimates of pensions to retirees and the full cost of financing the family allowance system in expenditures.	• Estimated portion of retirement add-on of 31.1% of salaries and total family allowances of 6.7% of salaries subtracted from expenditures.

EXHIBIT II-11 (Continued)

Summary of Comparability Problems and Adjustments to France's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Tertiary Education	• Omission of expenditures for adult education and other extra-scolaire education.	• 80% to 100% of expenditures for extra-scolaire education reported in UOC2 and RRS added to expenditures. One-third included in tertiary education.
	• Omission of separately budgeted and funded research from tertiary education.	• Estimated research expenditures based on OECD R&D statistics for France, adjusted downward to reflect funds flowing to non-educational institutions, added to expenditures.
	• Inclusion of household expenditures for books, supplies, etc.	• Estimated expenditures per pupil from RRS data and enrollments subtracted from expenditures.
	• Inclusion of outlays for housing, meals, and other ancillary services for tertiary students in expenditures.	• Expenditures for ancillary services included in UOC2 subtracted from expenditures.
	• Inclusion of subsidies for student living expenses in expenditures.	• Expenditures reported in UOC2 subtracted from expenditures.
	• Inclusion of overestimates of pensions to retirees and the full cost of financing the family allowance system in expenditures.	• Estimated portion of retirement add-on of 31.1% of salaries and total family allowances of 6.7% of salaries subtracted from expenditures.
	• Inclusion of remuneration of teacher trainees in expenditures.	• Amount reported to INES as remuneration of teacher trainees subtracted from expenditures.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-12a

Adjustment of France's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Francs, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimated Expenditures for 2-Year-Olds Subtracted from Expenditures	-4,727	-3,882
Estimated Household Expenditures for Books, Supplies, Etc. Subtracted from Expenditures	-2,147	-1,431
Salary Add-Ons for Retirement and Family Allowances Subtracted from Expenditures and Imputed Contributions for Civil Service Pensions Included in Expenditures	-4,572	-3,957
Primary-Secondary Education		
Estimated Expenditures for Adult Education and Extra-Scolaire Education Added to Expenditures	+26,890	+33,600
Estimated Household Expenditures for Books, Supplies, Etc. Subtracted from Expenditures	-13,223	-8,815
Firms' Expenditures for Internal Training of Workers Subtracted from Expenditures	-27,622	-27,622
Estimated Expenditures of Private Employers for Apprenticeship Training Added to Expenditures	+2,508	+2,508
Subsidies for Student Living Expenses Subtracted from Expenditures	-3,320	-3,320
Salary Add-Ons for Retirement and Family Allowances Subtracted from Expenditures and Imputed Contributions for Civil Service Pensions Included in Expenditures	-25,406	-21,952
Tertiary Education		
Estimated Expenditures for Adult Education and Extra-Scolaire Education Added to Expenditures	+13,435	+16,800
Estimated Research Expenditures Added to Expenditures	+12,400	+15,400
Estimated Household Expenditures for Books, Supplies, Etc. Subtracted from Expenditures	-3,670	-2,446
Expenditures for Housing, Meals, and Other Ancillary Services for Tertiary Students Subtracted from Expenditures	-5,000	-4,300
Subsidies for Student Living Expenses Subtracted from Expenditures	-4,100	-4,100
Salary Add-Ons for Retirement and Family Allowances Subtracted from Expenditures and Imputed Contributions for Civil Service Pensions Included in Expenditures	-6,228	-5,706
Unallocated Expenditures		
Remuneration of Teacher Trainees Excluded from Expenditures	-5,992	-5,992
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-50,774	-25,215

EXHIBIT II-12b

Summary of Adjustments to France's Data on Total Public and Private Expenditures for All Education Levels Combined (Francs, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	403,920	353,146	-12.6%	378,705	-6.2%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-13a

Adjustment of France's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Francs, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-11,446	-9,270
Interlevel Transfers		
Expenditures for Special Education Transferred from Unallocated Preprimary Through Secondary Expenditures to Preprimary Education	+2,380	+2,380
Estimated Share of Unallocated Expenditures for All Education Levels Added to Expenditures	+1,269	+1,269
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	-7,797	-5,621
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-40,173	-25,601
Interlevel Transfers		
Expenditures for Apprenticeship Programs Transferred from Unallocated Preprimary Through Secondary Expenditures to Secondary Education	+3,944	+3,944
Expenditures for Special Education Transferred from Unallocated Preprimary Through Secondary Expenditures to Primary-Secondary Education	+9,498	+9,498
Estimated Share of Unallocated Expenditures for All Education Levels Added to Expenditures	+11,417	+11,417
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-15,314	-742
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+6,837	+15,648
Interlevel Transfers		
Estimated Share of Unallocated Expenditures for All Education Levels Added to Expenditures	+1,409	+1,409
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	+8,246	+17,057

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-13b

Summary of Adjustments to France's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Francs, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	38,434	30,637	-20.3%	32,813	-14.6%
Primary-Secondary Education					
Total Expenditures	264,599	249,285	-5.8%	263,857	-0.3%
Tertiary Education					
Total Expenditures	64,978	73,224	+12.7%	82,035	+26.3%
Unallocated Expenditures (Preprimary Through Secondary Education)					
Total Expenditures	21,814	0	-100.0%	0	-100.0%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	14,095	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

Germany

Germany's expenditure data submitted to INES for *EAG2* were compiled by the Federal Statistical Office from the budgets and statistical reports of the Länder and the local communities. Land and community governments in Germany follow a standard accounting structure and therefore provide relatively comparable expenditure data to the Federal Statistical Office.

The analysis of Germany's expenditure data identified a number of important comparability problems. These involved: (1) the inclusion of certain expenditures excluded from the operational definition of expenditures used in this study; (2) the omission of other expenditures; (3) the misclassification of expenditures among education levels; (4) the inclusion of some expenditures in the "unallocated" category that belong in specific education levels; and (5) the inclusion of certain activities in "unallocated" expenditures that were not part of the operational definition of expenditures used in this study. To address these problems, the following adjustments were made to Germany's expenditure data.

First, several activities and functions were subtracted from reported expenditures, with the most substantial being the subtraction from secondary education of employers' wage payments to apprentices participating in dual system programs and the subtraction from tertiary education of university hospitals' expenditures. Second, a number of items were added to expenditures, most notably private expenditures for both public and private schools and universities. Third, selected expenditures were shifted between levels, e.g., a portion of expenditures for "second-cycle" upper secondary education was transferred from secondary to tertiary education. Fourth, expenditures for continuing vocational education were moved from unallocated expenditures to tertiary education. Finally, selected expenditures accounted for as "unallocated," e.g., recreational courses at adult education centers, in-service training at private firms, higher education grants and loans, were subtracted from total expenditures.

Exhibits II-14, II-15a and II-16a summarize expenditure comparability problems by education level for Germany and the adjustments made to Germany's expenditures to address these problems. Exhibit II-15b provides an overall picture of the effects of the adjustments to Germany's expenditures for all education levels; Exhibit II-16b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, adjustments to Germany's data resulted in possible reductions to total expenditures ranging from about 8 to 18 percent. These reductions in expenditures were due mainly to the exclusion of expenditures cited above from current expenditures. However, the adjustments had different effects at different education levels. Expenditures for preprimary education were estimated to increase between 50 and 65 percent, primarily because of the inclusion of estimates of private expenditures for private preschools. Estimated expenditures for primary-secondary education were between 2 and 14 percent below reported expenditures — due largely to the subtraction of private expenditures for wages paid apprentices in apprenticeship programs. Finally, expenditures for tertiary education were estimated to decrease by about 2 percent under the low estimate and increase by almost 14 percent under the high estimate. Under the low estimate, the exclusion of expenditures for university hospitals was nearly offset by the addition of private expenditures at public universities, the transfer in of expenditures for second-cycle upper secondary students from primary-secondary education, and the transfer in of continuing vocational education from unallocated expenditures. Under the high estimate, the addition to expenditures more than offset the subtraction of expenditures for university hospitals.

EXHIBIT II-14

Summary of Comparability Problems and Adjustments to Germany's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of private expenditures at private preschools.	• Estimate of private expenditures at private preschools added to expenditures based on study by the Federal Statistical Office (FSO); adjustments are 90% and 110% of FSO estimates of 2.320 billion DM.
	• Omission of private expenditures at public preschools.	• Estimate of private expenditures at public preschools added to expenditures based on FSO study; adjustments are 90% and 110% of FSO estimate of 430 million DM.
	• Omission of expenditures for preschool classes (Vorklassen) and school kindergarten (Schulkindergarten) classes in public primary schools from preprimary education.	• Public expenditures allocated to preprimary education based on enrollments in preschool classes and school kindergarten classes published in *Basic and Structural Data.*
	• Inclusion of expenditures for programs for 2-year-olds in public preprimary schools.	• Estimate of expenditures for programs for 2-year-olds based on share of preprimary enrollments excluded from expenditures.
	• Omission of expenditures of local authorities for administration and operation of schools.	• Estimated expenditures of local authorities at 2% and 5% of current expenditures.
Primary-Secondary Education	• Omission of private expenditures at public primary-secondary schools.	• Estimate of private expenditures at public primary-secondary schools added to expenditures based on data in FSO study.
	• Omission of private expenditures at private primary-secondary schools.	• Estimate of private expenditures based on enrollments in *Basic and Structural Data* and public expenditures in public schools added to expenditures.
	• Inclusion of expenditures for preschool classes (Vorklassen) and school kindergarten (Schulkindergarten) classes in public primary schools in primary education.	• Estimate of public expenditures for preschool classes and school kindergarten classes in regular primary school programs subtracted from expenditures based on enrollments in *Basic and Structural Data.*
	• Inclusion of firms' compensation to student apprentices.	• Compensation payments whose proportion was estimated in the 1983 study by I. Noll, *Net Costs of Apprenticeship Training*, subtracted from expenditures.
	• Omission of expenditures for apprentice programs in public agencies.	• Estimate of expenditures added based on enrollments in these programs reported in *Basic and Structural Data.*
	• Inclusion of expenditures for "second-cycle" students as upper secondary.	• 20 to 25 percent of upper secondary expenditures, as recorded in UNESCO form, transferred to the tertiary level.
	• Omission of expenditures by local authorities for administration and operation of schools.	• Estimated expenditures of local authorities at 2% and 5% of current expenditures.

EXHIBIT II-14 (Continued)

Summary of Comparability Problems and Adjustments to Germany's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Tertiary Education	• Omission of private expenditures at private universities.	• Estimated expenditures from FSO study added to expenditures.
	• Omission of private expenditures at public universities.	• Estimated expenditures from FSO study added to expenditures.
	• Classification of some continuing vocational education as unallocated.	• Expenditures from unallocated expenditures transferred to tertiary education based on data in *Basic and Structural Data.*
	• Inclusion of a large proportion of university hospital expenditures as expenditures for medical school instruction.	• 20 percent of university hospital "investment" reduced to a range of from 0 to 10 percent.
	• Exclusion of expenditures for "second-cycle" students from tertiary category.	• 20 to 25 percent of upper secondary expenditures, as recorded in UNESCO form, transferred to tertiary education.
Unallocated Expenditures	• Inclusion of some continuing vocational education that should be classified as higher education.	• Expenditures transferred to tertiary education based on data in *Basic and Structural Data.*
	• Inclusion of recreational education programs in adult education centers.	• Proportion of "continuing education" expenditure dedicated to recreational adult education subtracted from expenditures based on enrollment data in *Basic and Structural Data.*
	• Inclusion of public expenditures on private firms' in-service training.	• Estimated expenditures subtracted based on line-item in *Basic and Structural Data.*
	• Inclusion of tertiary level public grants for student living expenses (which are not included in our standard).	• "Assistance Schemes" expenditures that are not accounted for by "Training Assistance" loans subtracted from expenditures based on data in *Basic and Structural Data.*
	• Inclusion of public expenditures for tertiary education loans without inclusion of repayments.	• Proportion of "Training Assistance" comprised by loans subtracted from expenditures based on data in *Basic and Structural Data.*
	• Inclusion of primary-secondary level public grants for living expenses as unallocated expenditures.	• Expenditures estimated and subtracted from unallocated expenditures.

Source: *International Expenditure Comparability Study*, 1997

EXHIBIT II-15a

Adjustment of Germany's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Deutschmarks, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Private Expenditures for Private Preschools Added to Expenditures	+2,088	+2,552
Estimate of Private Expenditures for Public Preschools Added to Expenditures	+387	+473
Estimate of Expenditures for Programs for 2-Year-Olds in Public Preschools Subtracted from Expenditures	-210	-171
Estimates of Expenditures by Local Authorities for Administration and Operation of Schools Added to Expenditures	+148	+402
Primary-Secondary Education		
Estimate of Private Expenditures for Public Primary-Secondary Schools Added to Expenditures	+680	+3,326
Estimate of Value of Student Apprentices' Compensation Subtracted from Firm Contributions to Cost of Apprenticeship Program	-18,000	-14,700
Estimate of Private Expenditures for Private Primary-Secondary Schools Added to Expenditures	+4,146	+6,219
Estimate of Expenditures for Public Agencies' Apprenticeships Added to Expenditures	+1,486	+1,817
Estimate of Expenditures by Local Authorities for Administration and Operation of Schools Added to Expenditures	+1,556	+4,337
Tertiary Education		
Estimate of a Proportion of University Hospitals' Expenses Subtracted from Expenditures	-4,800	-4,560
Estimate of Private Expenditures for Private Universities Added to Expenditures	+180	+220
Estimate of Private Expenditures for Public Universities Added to Expenditures	+680	+3,326
Unallocated Expenditures		
Estimate of Public Expenditures for Recreational Courses at Adult Education Centers, In-Service Training at Private Firms, Loans for Training Assistance, Grants for Living Expenses Excluded from Expenditures	-13,982	-13,865
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-25,641	-10,624

EXHIBIT II-15b

Summary of Adjustments to Germany's Data on Total Public and Private Expenditures for All Education Levels Combined (Deutschmarks, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	141,664	116,023	-18.1%	131,040	-7.5%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-16a

Adjustment of Germany's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Deutschmarks, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+2,413	+3,256
Interlevel Transfers		
Estimate of Expenditures for Preschool Classes (Vorklassen) and School Kindergarten Classes (Schulkindergarten) Allocated from Primary-Secondary Education	+359	+397
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+2,772	+3,653
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-10,132	+999
Interlevel Transfers		
Estimate of Expenditures for Preschool Classes (Vorklassen) and School Kindergarten Classes (Schulkindergarten) Transferred to Preprimary Education	-397	-359
Estimate of Proportion of Upper Secondary Expenditures for Second-Cycle Students Transferred to Tertiary Education	-2,984	-2,441
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-13,513	-1,801
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-3,940	-1,014
Interlevel Transfers (Including Distribution of Unallocated Expenditures)		
Estimate of Expenditures for Continuing Vocational Education That Should Be Classified as Higher Education Transferred from Unallocated Expenditures	+1,105	+1,222
Estimate of Proportion of Upper Secondary Expenditures for Second-Cycle Students Transferred from Primary-Secondary Education	+2,441	+2,984
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-394	+3,192

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-16b

Summary of Adjustments to Germany's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Deutschmarks, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	5,602	8,374	+49.5%	9,255	+65.2%
Primary-Secondary Education					
Total Expenditures	97,362	83,849	-13.9%	95,561	-1.8%
Tertiary Education					
Total Expenditures	23,613	23,219	-1.7%	26,805	+13.5%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	15,087	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

The Netherlands

The review of the Netherlands' expenditure data identified four main problems for which adjustments were required. These were the inclusion of public subsidies for students' living expenses, the omission of expenditures that were part of the operational definition of expenditures in this study, the misclassification of expenditures among education levels, and the inclusion of expenditures in the "unallocated" category that belong in specific education levels.

Several adjustments were made to the Netherlands' expenditures to address the other comparability problems. These included: the addition of private expenditures for private education at all education levels; the addition of expenditures by local authorities for administration and support services to preprimary and primary-secondary education; the addition of expenditures for research to tertiary education; the subtraction of expenditures for students' living expenses from primary-secondary and tertiary education; the subtraction of estimated public transfers to other private entities; the reallocation of a portion of expenditures for senior secondary vocational education (MBO) from secondary to tertiary education; and the distribution of "unallocated" expenditures to all levels of education based on their respective proportions of expenditures without the unallocated expenditures. Expenditures of independent private schools were not included in expenditures for secondary education, as appropriate data were not available to make this adjustment. However, the addition of these expenditures would have only a marginal effect, since independent private schools represent only a small segment of primary-secondary education in the Netherlands.

The adjustments to the Netherlands' expenditures are shown in Exhibits II-17, II-18a and II-19a. Exhibit II-18b provides an overall picture of the effects of the adjustments to the Netherlands' expenditures for all education levels; Exhibit II-19b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

EXHIBIT II-17

Summary of Comparability Problems and Adjustments to the Netherlands' Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of private expenditures for government-dependent private preschools.	• Expenditures estimated to be between 4% and 8% of current expenditures.
	• Omission of expenditures by local authorities for administration and support costs.	• Estimated expenditures of 1% and 4% of current expenditures of public institutions.
	• Unallocated expenditures not distributed to preprimary education.	• 7% of unallocated expenditures distributed to preprimary education.
	• Inclusion of unspecified public transfers to "other private entities."	• Estimated transfers provided by the Ministry of Education.
Primary-Secondary Education	• Omission of private expenditures for government-dependent private primary and secondary schools.	• Expenditures estimated to be between 4% and 8% of current expenditures.
	• Omission of expenditures for independent private schools.	• No adjustment.
	• Omission of expenditures for adult education.	• Expenditures reported in UOC2 added to expenditures for secondary education based on ages of students in MBO courses.
	• MBO included completely as secondary education.	• Partial MBO expenditures shifted from secondary to tertiary education based on ages of students in MBO courses.
	• Omission of expenditures by local authorities for administration and support costs.	• Estimated expenditures of 1% and 4% of current expenditures of public institutions.
	• Omission of private firms' expenditures for apprenticeship training.	• Estimated per pupil expenditures for apprenticeship training of 50% and 100% of public expenditure per secondary student multiplied by number of apprentices in secondary institutions.
	• Unallocated expenditures not distributed to primary-secondary education.	• 64.9% of unallocated expenditures distributed to primary-secondary education.
	• Inclusion of public subsidies for students' living expenses.	• Estimated expenditures for public subsidies provided by the Ministry of Education.
	• Inclusion of unspecified public transfers to "other private entities."	• Estimated transfers provided by the Ministry of Education.

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EXHIBIT II-17 (continued)

Summary of Comparability Problems and Adjustments to the Netherlands' Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Tertiary Education	• Exclusion of expenditures for research by national science agency and contract research funds.	• Expenditures for research included in tertiary education expenditures.
	• MBO included completely as secondary education.	• Partial MBO expenditures shifted in from secondary education based on ages of students in MBO courses.
	• Private funds received by tertiary institutions excluded from expenditures.	• Private funds added to tertiary expenditures based on estimated private share of expenditures. Low estimate: 1.5% of total. High estimate: 2% of total.
	• Unallocated expenditures not distributed to tertiary education.	• 28.1% of unallocated expenditures distributed to tertiary education.
	• Inclusion of public subsidies for students' living expenses.	• Estimated expenditures for public subsidies provided by the Ministry of Education.
	• Inclusion of unspecified public transfers to "other private entities."	• Estimated transfers provided by the Ministry of Education.
Unallocated Expenditures	• Inclusion of unspecified public transfers to "other private entities."	• Estimated transfers provided by the Ministry of Education.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-18a

Adjustment of the Netherlands' Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Guilder, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Private Expenditures for Government-Dependent Private Preschools Added to Expenditures	+46	+92
Estimate of Local Authorities' Expenditures for Administration and Support Costs Added to Expenditures	+18	+71
Estimate of Public Transfers to "Other Private Entities" Subtracted from Expenditures	-102	-102
Primary-Secondary Education		
Estimate of Private Expenditures for Government-Dependent Private Primary-Secondary Schools Added to Expenditures	+477	+954
Estimate of Expenditures of Independent Private Schools Added to Expenditures	—	—
U0C2 Expenditures for Adult Education in Secondary Education Added to Expenditures	+201	+201
Estimate of Private Expenditures for Apprenticeship Training Added to Expenditures	+445	+890
Estimate of Local Authorities' Expenditures for Administration and Support Costs Added to Expenditures	+150	+618
Estimate of Public Transfers to "Other Private Entities" Subtracted from Expenditures	-1,630	-1,630
Estimate of Public Subsidies for Students' Living Expenses Subtracted from Expenditures	-1,178	-1,178
Tertiary Education		
Research Expenditures by National Science Agency and Contract Research Funds Added to Expenditures	+540	+540
Estimate of Private Funds Added to Expenditures	+112	+150
Estimate of Public Transfers to "Other Private Entities" Subtracted from Expenditures	-101	-101
Estimate of Public Subsidies for Students' Living Expenses Subtracted from Expenditures	-1,613	-1,613
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-2,635	-1,108

— Not computed.

EXHIBIT II-18b

Summary of Adjustments to the Netherlands' Data on Total Public and Private Expenditures for All Education Levels Combined (Guilder, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	31,340	28,705	-8.4%	30,232	-3.5%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-19a

Adjustment of the Netherlands' Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Guilder, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-38	+61
Interlevel Transfers		
7% of Unallocated Expenditures Distributed to Preprimary Education	+66	+66
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+28	+127
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-1,535	-145
Interlevel Transfers		
Partial Expenditures for MBO Shifted to Tertiary Education	-945	-630
64.9% of Unallocated Expenditures Distributed to Primary-Secondary Education	+617	+617
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-1,863	-158
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-1,062	-1,024
Interlevel Transfers		
Partial Expenditures for MBO Shifted in from Secondary Education	+630	+945
28.1% of Unallocated Expenditures Distributed to Tertiary Education	+267	+267
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-165	+188

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-19b

Summary of Adjustments to the Netherlands' Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Guilder, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	1,900	1,928	+1.5%	2,027	+6.7%
Primary-Secondary Education					
Total Expenditures	19,420	17,557	-9.6%	19,262	-0.8%
Tertiary Education					
Total Expenditures	9,070	8,905	-1.8%	9,258	+2.1%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	950	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

Overall, public and private expenditures for all education levels were estimated to decrease between 3.5 and 8 percent; expenditures were also estimated to decrease for primary-secondary education and tertiary education, under the low estimate, but to increase for preprimary education and tertiary education, under the high estimate. Estimated expenditures for primary-secondary education decreased between 1 and 10 percent; expenditures for tertiary education decreased by 2 percent under the low estimate and increased by about 2 percent under the high estimate. Preprimary expenditures increased because of the addition of estimated expenditures for private education, a share of "unallocated" expenditures, and expenditures by local authorities for school administration and support services, but these increases were partially offset by the subtraction of public transfers to other private entities. Primary-secondary education expenditures decreased largely because the addition of private expenditures for education and apprenticeship training, public expenditures for adult education, expenditures by local authorities for school administration and support services, and a share of "unallocated" expenditures, were more than offset by the subtraction of public subsidies for students' living expenses and public transfers to other private entities. Expenditures for tertiary education decreased under the low estimate, largely because of the subtraction of public subsidies for students' living expenses. However, under the high estimate, expenditures increased slightly, due to the transfer of expenditures for MBO from secondary education and of unallocated expenditures.

Spain

Expenditure data collected by two agencies provide the basis for Spain's education expenditure data submitted to INES and used in this study. These are the *Ministerio de Educación y Ciencia* (MEC) and the *Instituto Nacional de Estadistica* (INE). The MEC generates national data on ***budgeted*** expenditures by *public* institutions from several national, regional and local government departments and the autonomous universities. The detailed expenditure data differ in the accounting structures used by each of the ministries and departments. However, the MEC transforms the data into a uniform format to produce national totals on budgeted expenditures and eliminates many of the internal inconsistencies in expenditure data. The public expenditure figures that the MEC reports to INES based on budget figures are good estimates of expenditures, although actual expenditures are likely to differ from the reported figures.[2]

The INE conducts two main collections of private expenditures that are used in the INES submission. These include an annual household expenditure survey and periodic surveys of expenditures by for-profit and non-profit private schools. The MEC and the INE produce data on total public and private expenditures for education for the INES submission by combining *budgeted* data on public expenditures with *actual* data on private expenditures generated from the household expenditures survey.

Our review of Spain's expenditure data identified two main types of problems: inclusion of some expenditures that were not part of the operational definition of expenditures used in this study; and omission of other expenditures because data are not available in budgets and other

[2]The MEC is currently unable to collect actual expenditure data because the national ministries and departments in the autonomous communities do not assemble all of the relevant expenditure data in central data systems. As Spain's education system exists in a government system that is still in the process of decentralizing, procedures to collect standard expenditure data from the autonomous communities are not yet fully in place. The differences between budgeted and actual expenditures are likely to be larger for specific functions or activities (e.g. student financial assistance) than for total expenditures.

information systems. To address the comparability problems with Spain's expenditures, a few items were added to reported expenditures and several items were subtracted. The following items were added to Spain's expenditure data to establish comparability based on our operational definition of expenditures. They were expenditures for university research, civil servant retirement, school-based health services (which are provided free by the government health service), and non-household private expenditures for private schools (which are not collected in Spain's household survey, but are collected in the survey of private schools). Expenditures that were subtracted from the total were: expenditures for in-service training in non-educational public agencies; household expenditures for educational goods and services, e.g., books, supplies, materials, etc.; secondary and tertiary scholarships and grants for living expenses; expenditures by non-collegiate tertiary schools; expenditures for preprimary education of 2-year-olds; and expenditures for repayment of principal and interest. The expenditures for in-service training in public agencies far exceeded the others in scale.[3]

Exhibits II-20, II-21a and II-22a summarize expenditure comparability problems by education level and the adjustments made to Spain's expenditure data to address these problems of comparability. Exhibit II-21b provides an overall picture of the effects of the adjustments to Spain's expenditures for all education levels; Exhibit II-22b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, total expenditures were estimated to decrease between 8 and 10 percent, but there were some differences at different education levels. Estimated expenditures for preprimary

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[3]In principle, we could have constructed an operational definition of expenditures that included some of these items. However, the operational definition used in this study excluded them, in part because comparable data were not available — and could not be estimated for other countries. Spain's expenditure data are, in fact, more comprehensive in some respects than data from other countries. To establish greater comparability, expenditures had to be subtracted from Spain's total, since expenditures could not be added in other countries.

EXHIBIT II-20

Summary of Comparability Problems and Adjustments to Spain's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Exclusion of private, non-household expenditures for private schools (from non-profit and for-profit sources).	• Expenditures from private, non-household sources on private schools added, based on data in the 1990-91 national private school survey, *Encuesta de Financiación y Gastos de la Enseñanza Privada.*
	• Exclusion of public contributions for retirement of civil servants working in education.	• Estimate of the public contribution to civil servants' retirement added, with a lower bound based on 5% of salaries and an upper bound based on 10% of salaries.
	• Inclusion of private expenditure on school supplies.	• Preprimary share of private expenditure on school supplies subtracted, based on enrollments and total private expenditures in *Informe Nacional de Educación.*
	• Exclusion of expenditures for school site health services provided by the government health service.	• Estimate of expenditures added, with a lower-bound estimate of 0.05% of expenditures and an upper-bound estimate of 0.15% of expenditures.
	• Inclusion of expenditures for preprimary programs for 2-year-olds in public preschools.	• Estimated expenditures for programs for 2-year-olds subtracted from expenditures based on proportion of public preschool enrollments.
	• Inclusion of expenditures for preprimary programs for 2-year-olds in private schools.	• Estimated expenditures for programs for 2-year-olds subtracted from expenditures based on proportion of private preschool enrollments.
	• Inclusion of expenditures for repayment of principal and interest (debt service).	• Expenditures for debt service excluded from total expenditures.
Primary-Secondary Education	• Inclusion of expenditures for in-service training in public agencies.	• Expenditures for in-service training in public agencies subtracted, based on line item in *Informe Nacional de Educación.*
	• Exclusion of private, non-household expenditures for private schools (from non-profit and for-profit sources).	• Expenditures from private, non-household sources on private schools added to expenditures, based on data in the 1990-91 national private school survey, *Encuesta de Financiación y Gastos de la Enseñanza Privada.*
	• Exclusion of public contributions for retirement of civil servants working in education.	• Estimate of the public contribution to civil servants' retirement added, with a lower bound based on 5% of salaries and an upper bound based on 10% of salaries.
	• Inclusion of private expenditure for school supplies.	• Primary-secondary share of private expenditure on school supplies subtracted from expenditures, based on enrollments and total private expenditure found in *Informe Nacional de Educación.*
	• Inclusion of public expenditure on grants for student living expenses.	• Portion of line-item expenditures for living-expenses grants for secondary and tertiary students (found in *Informe Nacional de Educación*) attributable to secondary students subtracted from expenditures; lower-bound estimate of 25% of the expenditures for secondary and an upper-bound estimate of 50% for secondary.
	• Exclusion of expenditures for school site health services provided by the government health services.	• Estimate of expenditures added, with a lower-bound estimate of 0.05% of expenditures and an upper-bound estimate of 0.15% of expenditures.
	• Inclusion of expenditures for repayment of principal and interest (debt service).	• Expenditures for debt service excluded from total expenditures.

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EXHIBIT II-20 (Continued)

Summary of Comparability Problems and Adjustments to Spain's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Tertiary Education	• Exclusion of university research expenditures.	• Three line-item amounts for research in the Ministry of Education and Science's budget added to expenditures.
	• Exclusion of public contributions for retirement of civil servants working in education.	• Estimate of the public contribution to civil servants' retirement added to expenditures, with a lower bound based on 5% of salaries and an upper bound based on 10% of salaries.
	• Inclusion of expenditures on non-collegiate tertiary schools.	• Public and private expenditures on proprietary schools found in the 1990-91 national private school survey, *Encuesta de Financiación y Gastos de la Enseñanza Privada*, subtracted from expenditures.
	• Inclusion of private expenditure for school supplies.	• Tertiary share of private expenditures on school supplies subtracted from expenditures, based on enrollments and total private expenditure in *Informe Nacional de Educación*.
	• Inclusion of public expenditure on grants for student living expenses.	• Portion of line-item expenditures for living-expenses grants for secondary and tertiary students (found in *Informe Nacional de Educación*) that is attributable to tertiary students subtracted from expenditures. Lower-bound estimate of 50% of the expenditure for tertiary and an upper-bound estimate of 75% for tertiary.
	• Inclusion of expenditures for repayment of principal and interest (debt service).	• Expenditures for debt service excluded from total expenditures.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-21a

Adjustment of Spain's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Pesetas, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Private, Non-Household Expenditures on Private Schools Added to Expenditures	+661	+661
Estimate of Public Retirement Contributions to Civil Servants Added to Expenditures	+3,863	+7,726
Estimate of Preschool Proportion of Private Expenditures on School Supplies Subtracted from Expenditures	-3,294	-3,294
Estimate of Cost for Public Provision of School-Site Health Services Added to Expenditures	+39	+116
Expenditures for Debt Service Subtracted from Expenditures	-11	-11
Estimate of Proportion of Public Preschool Expenditures for 2-Year-Olds Subtracted from Expenditures	-3,318	-1,991
Estimate of Proportion of Private Preschool Expenditures for 2-Year-Olds Subtracted from Expenditures	-1,362	-817
Primary-Secondary Education		
Private, Non-Household Expenditures on Private Schools Added to Expenditures	+9,375	+9,375
Estimate of Public Retirement Contributions to Civil Servants Added to Expenditures	+40,695	+81,390
Estimate of Primary-Secondary Proportion of Private Expenditures on School Supplies Subtracted from Expenditures	-25,362	-25,362
Estimate of Cost for Public Provision of School-Site Health Services Added to Expenditures	+411	+1,241
In-Service Training at Public Agencies Subtracted from Expenditures	-224,569	-224,569
Grants for Student Living Expenses Subtracted from Expenditures	-14,507	-29,014
Expenditures for Debt Service Subtracted from Expenditures	-113	-113
Tertiary Education		
Estimate of Public Retirement Contributions to Civil Servants Added to Expenditures	+8,171	+16,342
Estimate of Tertiary Proportion of Private Expenditures on School Supplies Subtracted from Expenditures	-4,282	-4,282
Proprietary School Subsidies Subtracted from Public Expenditures	-30,717	-30,717
Proprietary School Tuition and Fees Subtracted from Private Expenditures	-2,533	-2,533
Grants for Student Living Expenses Subtracted from Expenditures	-43,521	-29,014
University Research Added to Expenditures	+1,246	+1,246
Expenditures for Debt Service Subtracted from Expenditures	-2,483	-2,483
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-291,611	-236,103

EXHIBIT II-21b

Summary of Adjustments to Spain's Data on Total Public and Private Expenditures for All Education Levels Combined (Pesetas, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	3,055,353	2,763,742	-9.5%	2,819,250	-7.7%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-22a

Adjustment of Spain's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Pesetas, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-3,422	+2,390
Interlevel Transfers		
Distribution of Unallocated Expenditures for Preprimary and Primary-Secondary Education	+19,830	+19,830
Distribution of Unallocated Expenditures for All Education Levels	+2,368	+2,368
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+18,776	+24,588
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-214,070	-187,052
Interlevel Transfers		
Distribution of Unallocated Expenditures for Preprimary and Primary-Secondary Education	+178,473	+178,473
Distribution of Unallocated Expenditures for All Education Levels	+19,998	+19,998
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-15,599	+11,419
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-74,119	-51,441
Interlevel Transfers		
Distribution of Unallocated Expenditures for All Education Levels	+3,947	+3,947
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-70,172	-47,494

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-22b

Summary of Adjustments to Spain's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Pesetas, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	201,327	220,103	+9.3%	225,915	+12.2%
Primary-Secondary Education					
Total Expenditures	2,106,098	2,090,499	-0.7%	2,117,517	+0.5%
Tertiary Education					
Total Expenditures	523,313	453,141	-13.4%	475,819	-9.1%
Unallocated Expenditures (Preprimary Through Secondary Education)					
Total Expenditures	198,303	0	-100.0%	0	-100.0%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	26,313	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

education increased between 9 and 12 percent, estimated expenditures for primary-secondary education remained virtually unchanged, while estimated expenditures for tertiary education decreased between 9 and 13 percent.

Preprimary education expenditures were estimated to change slightly prior to the distribution of unallocated expenditures — largely because the subtraction of household expenditures for school books and supplies and the proportion of expenditures for programs for two-year-olds was offset by additions to expenditures for retirement contributions for civil

servants and private expenditures for private schools. However, the distribution of unallocated expenditures to preprimary education based on its share of current and capital expenditures resulted in a significant increase in expenditures in both the low and high estimates.

Estimated expenditures for primary-secondary education decreased significantly prior to the distribution of unallocated expenditures, primarily because of the subtraction of expenditures for in-service training at non-education agencies. However, with the distribution of unallocated expenditures to primary-secondary education based on its share of current and capital expenditures, primary-secondary education expenditures increased to approximately the same level reported to OECD. Total expenditures were less than 1 percent below reported expenditures under the low estimate and less than 1 percent above reported expenditures under the high estimate.

In contrast to the other two education levels, estimated tertiary education expenditures declined after adjustments to improve comparability. The decreases were due mainly to the subtraction of public subsidies for non-collegiate higher education and government grants for students' living expenses. As tertiary education only received a small proportion of unallocated expenditures, the addition was not sufficient to overcome subtractions of expenditures for other functions and activities.

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Sweden

Our review of Sweden's expenditure data identified relatively few comparability problems. One of the most significant problems was the omission of private expenditures for all education levels. Other omissions included expenditures for education programs for 3-to-5-year-olds from preprimary education, expenditures for adult education from secondary education, and expenditures for research from tertiary education. Another problem was the inclusion of public subsidies for students' living expenses in both secondary and tertiary education; this subsidy was excluded from the operational definition of expenditures used in this study. A final problem was a potential overestimate of public expenditures for pension outlays for teachers and other school staff.

To address Sweden's expenditure comparability problems, estimated expenditures for the omitted functions and activities were added to reported expenditures and subsidies for student living expenses were subtracted from expenditures.[4] As we were not certain of the magnitude of the potential overestimate of expenditures for pension outlays, we only subtracted an estimate of expenditures for pensions from the low estimate of expenditures at all education levels; the high estimate retained the full amount of reported expenditures for pensions in figures for total expenditures.

Exhibits II-23, II-24a and II-25a summarize expenditure comparability problems by education level for Sweden and the adjustments made to Sweden's expenditures to address these problems. Exhibit II-24b provides an overall picture of the effects of the adjustments

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[4]Private expenditures were estimated for preprimary education, but adequate information was not available to create estimates of private expenditures for primary-secondary education and tertiary education.

EXHIBIT II-23

Summary of Comparability Problems and Adjustments to Sweden's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of expenditures for preprimary programs for 3-to-5-year-olds.	• Estimated expenditures are based on number of 3-to-5-year olds enrolled in school and expenditures per pupil reported to INES.
	• Omission of all private expenditures for preprimary education.	• Estimate based on private expenditures in 1992 added to expenditures. 1991 expenditures estimated to be between 3% and 6% lower than 1992 expenditures.
	• Inclusion of possible overestimate of pension outlays which are based on a legally determined contribution rate that exceeds current pension outlays.	• Low estimate: difference between an imputed contribution rate of 16% and the current rate of 25% subtracted from expenditures. High estimate: no adjustment.
Primary-Secondary Education	• Omission of expenditures for adult education.	• High estimate: expenditures reported in UOC2 added to expenditures. Low estimate: 75% of UOC2 data added to expenditures.
	• Inclusion of possible overestimate of pension outlays, which are based on a legally determined contribution rate that exceeds current pension outlays.	• Low estimate: difference between an imputed contribution rate of 16% and the current rate of 25% subtracted from expenditures. High estimate: no adjustment.
	• Inclusion of scholarships for student living expenses in expenditures.	• Outlays for scholarships provided by Skolverket subtracted from expenditures.
Tertiary Education	• Omission of expenditures for separately funded research.	• Estimated expenditures added based on figures provided INES for 1992, assuming increase of between 2% and 10% between 1991 and 1992.
	• Inclusion of scholarships for student living expenses in expenditures.	• Outlays for scholarships provided by Skolverket subtracted from expenditures.
	• Inclusion of possible overestimate of pension outlays, which are based on a legally determined contribution rate that exceeds current pension outlays.	• Low estimate: difference between an imputed contribution rate of 16% and the current rate of 25% subtracted from expenditures. High estimate: no adjustment.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-24a

Adjustment of Sweden's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Kroner, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimated Expenditures for 3-to-5-Year-Olds in Preprimary Education Added to Expenditures	+3,650	+4,000
Estimated Private Expenditures for Preprimary Education Added to Expenditures	+1,519	+1,563
Expenditures Adjusted to Reduce Possible Overestimate of Pension Outlays	-499	0
Primary-Secondary Education		
Estimated Expenditures for Adult Education Added to Expenditures	+6,481	+8,641
Expenditures Adjusted to Reduce Possible Overestimate of Pension Outlays	-4,158	0
Subsidies for Student Living Expenses Subtracted from Expenditures	-4,725	-4,725
Tertiary Education		
Estimated Expenditures for Research Added to Expenditures	+4,190	+4,519
Subsidies for Student Living Expenses Subtracted from Expenditures	-3,412	-3,412
Expenditures Adjusted to Reduce Possible Overestimate of Pension Outlays	-927	0
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+2,119	+10,586

EXHIBIT II-24b

Summary of Adjustments to Sweden's Data on Total Public and Private Expenditures for All Education Levels Combined (Kroner, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	85,328	87,447	+2.5%	95,914	+12.4%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-25a

Adjustment of Sweden's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Kroner, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+4,670	+5,563
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+4,670	+5,563
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-2,402	+3,916
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-2,402	+3,916
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-149	+1,107
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-149	+1,107

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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to Sweden's expenditures for all education levels; Exhibit II-25b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, total expenditures were estimated to increase between 2.5 and 12 percent, but the largest increase was in preprimary education (over 200 percent under both the low and high estimates of expenditures). Expenditures for both primary-secondary education and tertiary education decreased under the low estimate (by 4 percent and 1 percent respectively), and increased modestly under the high estimate (by 6 percent and 7 percent respectively). Several factors accounted for the differences across the education levels.

One of the most important factors was the addition of private expenditures for private schooling to preprimary education and the absence of this addition to other education levels. In addition, the subtraction of estimated public subsidies for students' living expenses from primary-secondary and tertiary education partially offset the addition of expenditures for adult education to secondary education and expenditures for research to tertiary education. Finally, the subtraction of possible overestimates of pension outlays from primary-secondary and tertiary education resulted in an overall reduction of expenditures under the low estimate for these two education levels.

EXHIBIT II-25b

Summary of Adjustments to Sweden's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Kroner, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	2,231	6,901	+209.3%	7,794	+249.4%
Primary-Secondary Education					
Total Expenditures	67,516	65,114	-3.6%	71,432	+5.8%
Tertiary Education					
Total Expenditures	15,582	15,433	-1.0%	16,689	+7.1%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

United Kingdom

The expenditure data for the United Kingdom contained four main comparability problems. The first was the omission of substantial expenditures, particularly at the tertiary level. The second was the inclusion of expenditures that were not part of the operational definition of expenditures used in this study, most notably public subsidies for student living expenses in expenditures for secondary and tertiary education. Third, expenditures for Further Education were accounted for completely in secondary education, rather than split between secondary and tertiary education. Finally, expenditures for special education were accounted for as unallocated expenditures, rather than by education level.

The adjustment of the United Kingdom's expenditures involved the addition of several major items to each level of education. These included: expenditures for day nurseries and registered play groups to preprimary education; private expenditures for both public and private schools to preprimary and primary-secondary education; university expenditures contained in the University Statistical Record (USR) statistics to tertiary education; and expenditures for health care benefits for all education staff to all education levels. It also involved: the subtraction of subsidies for student living expenses from expenditures for secondary and tertiary education; the subtraction of expenditures for debt service from all education levels, including unallocated expenditures; the reallocation of a portion of Further Education expenditures from secondary to tertiary education; the allocation of expenditures for special education to preprimary and primary-secondary education; and the elimination of the Value Added Tax (VAT) from "unallocated" expenditures.

Exhibits II-26, II-27a and II-28a summarize expenditure comparability problems by education level and the adjustments made to the United Kingdom's expenditure data to address these problems. Exhibit II-27b provides an overall picture of the effects of the adjustments to the

EXHIBIT II-26

Summary of Comparability Problems and Adjustments to the United Kingdom's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of private expenditures for public preprimary schools.	• Private expenditures estimated from selected items on Form RO1, scaled up and allocated to preprimary education based on preprimary share of FTE public school enrollments.
	• Omission of expenditures for independent preprimary schools.	• Estimated expenditures based on independent private schools' shares of total FTE enrollment and per student expenditures in public schools added to expenditures. Low estimate assumed per student expenditures equal to public schools' expenditures; high estimate assumed expenditures at 125% of public schools' expenditures.
	• Omission of expenditures for day nurseries and registered play groups.	• Estimated FTE enrollments multiplied by per student expenditures in public preprimary schools. Low estimate used 60% of public schools' per student expenditures; high estimate used 80%.
	• Inclusion of all preprimary expenditures for special education in undistributed expenditures.	• Expenditures allocated to preprimary education based on preprimary percentage of FTE enrollments in public schools.
	• Omission of expenditures for health care benefits under National Health Service for education staff.	• Estimate of 4% to 6% of the salary portion of staff compensation added to expenditures.
	• Inclusion of expenditures for debt service.	• Reported expenditures for debt service subtracted from expenditures.

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EXHIBIT II-26 (Continued)

Summary of Comparability Problems and Adjustments to the United Kingdom's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Primary-Secondary Education	• Omission of expenditures for adult education centers.	• Current expenditures reported to INES for secondary education were 183 million pounds lower than figure reported to UNESCO. Difference assumed to be adult education and added to expenditures.
	• Omission of private expenditure for public primary and secondary schools.	• Private expenditures estimated from selected items on Form RO1, scaled up and allocated to primary-secondary education based on primary-secondary share of FTE public school enrollments.
	• Omission of private expenditures for independent primary and secondary schools.	• Estimated expenditures based on independent private schools' share of total FTE enrollment and per student expenditures in public schools added to expenditures. Low estimate assumed per student expenditures equal to public schools' expenditures; high estimate assumed expenditures at 125% of public schools' expenditures.
	• Omission of private expenditures for voluntary schools.	• No adjustment: data not available.
	• Inclusion of all expenditures for Further Education (FE) in secondary education.	• Estimated FE share of secondary expenditures (23%) plus estimated payments from private sources allocated to tertiary education. Low estimate assumed 15% of FE expenditures for tertiary education; high estimate assumed 30%, in absence of FTE enrollments by qualification.
	• Inclusion of expenditures for student living expenses (maintenance grants) in primary-secondary education.	• Estimated share of maintenance grants for secondary education subtracted from expenditures for primary-secondary education.
	• Inclusion of all primary-secondary expenditures for special education in undistributed expenditures.	• Expenditures allocated to primary-secondary education based on primary-secondary percentage of FTE enrollments in public schools.
	• Omission of expenditures for health care benefits under National Health Service for education staff.	• Estimate of 4% to 6% of the salary portion of staff compensation added to expenditures.
	• Inclusion of expenditures for debt service.	• Reported expenditures for debt service subtracted from expenditures.

EXHIBIT II-26 (Continued)

Summary of Comparability Problems and Adjustments to the United Kingdom's Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Tertiary Education	• Omission of expenditures for universities in University Statistical Record (USR) statistics.	• Revenues in 1989-90 University Statistical Record inflated to 1990-91 based on increase in central government funding of universities and added to tertiary expenditures.
	• Omission of a portion of polytechnic and college expenditures.	• Income from endowments, other general sources, research, and other services estimated as a percent of university income, relative to enrollments, and added to tertiary expenditures.
	• Omission of expenditures for training nurses and paramedical personnel in institutions operated by the Department of Health (DH).	• Estimated expenditures based on enrollments and per student expenditures for other tertiary education. Low estimate assumed per student expenditures at 60% of other tertiary expenditures; high estimate assumed 90%.
	• Omission of expenditures of private tertiary institutions.	• No adjustment: data not available.
	• Inclusion of all FE expenditures in secondary education.	• Estimated share of secondary expenditures (23%) plus estimated payments from private sources allocated to tertiary education. Low estimate assumed 15% of secondary expenditures for tertiary education; high estimated assumed 30%.
	• Inclusion of expenditures for student living expenses (maintenance grants) in tertiary education.	• Estimated share of maintenance grants for universities, other higher education and technical training subtracted from tertiary expenditures.
	• Omission of expenditures for health care benefits under National Health Service for education staff.	• Estimate of 4% to 6% of the salary portions of staff compensation added to expenditures.
	• Inclusion of expenditures for debt service.	• Reported expenditures for debt service subtracted from expenditures.
Unallocated Expenditures	• Inclusion of universities' Value Added Tax (VAT) in expenditures.	• VAT of 443 million pounds excluded from expenditures.
	• Inclusion of expenditures for debt service.	• Reported expenditures for debt service subtracted from expenditures.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-27a

Adjustment of the United Kingdom's Data on Total Public and Private Expenditures to Improve Comparability, by Education Level (Pounds, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimated Private Expenditures for Public Schools Included in Preprimary Education	+108	+108
Estimated Expenditures of Independent Preprimary Schools Included in Preprimary Education	+79	+98
Estimated Expenditures for Day Nurseries and Registered Play Groups Included in Expenditures	+454	+736
Estimated Expenditures for Health Care Benefits for Education Staff Added to Expenditures	+44	+77
Expenditures for Debt Service Subtracted from Expenditures	-36	-36
Primary-Secondary Education		
Expenditures for Adult Education Centers Included in Secondary Education	+183	+183
Estimated Private Expenditures for Public Primary and Secondary Schools Included in Expenditures	+1,313	+1,313
Estimated Private Expenditures for Private Independent Schools Included in Primary and Secondary Education	+1,026	+1,359
Estimate of Public Expenditures for Student Living Expenses (Maintenance Grants) Subtracted from Primary-Secondary Education	-186	-186
Estimated Expenditures for Health Care Benefits for Education Staff Added to Expenditures	+564	+856
Expenditures for Debt Service Subtracted from Expenditures	-796	-796
Tertiary Education		
Estimated Expenditures for Universities, Polytechnics and Colleges Added to Tertiary Education	+1,950	+2,300
Estimated Expenditures for Training Nurses Included in Tertiary Education	+368	+584
Subsidies for Student Living Expenses (Maintenance Grants) Subtracted from Tertiary Education	-842	-842
Estimated Expenditures for Health Care Benefits for Education Staff Added to Expenditures	+121	+207
Expenditures for Debt Service Subtracted from Expenditures	-41	-41
Unallocated Expenditures		
University Value Added Tax (VAT) Excluded from Expenditures	-443	-443
Expenditures for Debt Service Subtracted from Expenditures	-35	-35
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+3,831	+5,442

EXHIBIT II-27b

Summary of Adjustments to the United Kingdom's Data on Total Public and Private Expenditures for All Education Levels Combined (Pounds, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	27,404	31,235	+14.0%	32,846	+19.9%

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT II-28a

Adjustment of the United Kingdom's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Pounds, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	+649	+983
Interlevel Transfers		
Estimated Share of Special Education Allocated to Preprimary Education	+104	+104
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+753	+1,087
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	+2,104	+2,729
Interlevel Transfers		
Shift of a Portion of Further Education Expenditures Out of Secondary Education	-877	-446
Estimated Share of Special Education Allocated to Primary-Secondary Education	+1,265	+1,265
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	+2,492	+3,548
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	+1,556	+2,208
Interlevel Transfers		
Reclassification of a Portion of Further Education Expenditures into Tertiary Education	+446	+877
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	+2,002	+3,085

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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United Kingdom's expenditures for all education levels; Exhibit II-28b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

As a result of these adjustments, total public and private expenditures for all education levels increased in the United Kingdom by an estimated 14 to 20 percent. The items specified above accounted for most of the increase in expenditures; however, the subtraction of debt service and subsidies for students' living expenses partially offset the expenditure increases generated by these items at the secondary and tertiary levels. Estimated expenditures for preprimary education were dramatically higher than reported expenditures (between 76 and 109 percent higher), in large part due to the inclusion of significant sectors of preprimary education that had been excluded from reported expenditures. Tertiary education showed the second-largest increase in estimated expenditures, due mainly to the addition of significant unreported expenditures for polytechnics, colleges, and universities, but also to the transfer in of expenditures for Further Education. Estimated expenditures for primary-secondary education also increased significantly compared with most other countries, but not as much as expenditures in the two other sectors. The reallocation of a portion of expenditures for Further Education to tertiary education and the subtraction of expenditures for debt service and subsidies for students' living expenses partially offset additions to primary-secondary expenditures.

EXHIBIT II-28b

Summary of Adjustments to the United Kingdom's Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Pounds, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	995	1,748	+75.7%	2,082	+109.2%
Primary-Secondary Education					
Total Expenditures	19,308	21,800	+12.9%	22,856	+18.4%
Tertiary Education					
Total Expenditures	5,289	7,291	+37.9%	8,374	+58.3%
Unallocated Expenditures (Preprimary Through Secondary Education)					
Total Expenditures	1,369	0	-100.0%	0	-100.0%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	443	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

United States

NCES collects data annually at both the K-12 level and the higher education level. Expenditure data for public K-12 education are collected from states and standardized to the extent possible into a uniform national structure. No expenditure data are collected for private K-12 education, but estimates of expenditures are included in national data in the INES submission. Data on expenditures for tertiary education are collected directly by NCES from public and private institutions (less-than-two-year, two-year, and four-year) through an institution-based collection. Neither NCES nor other government agencies currently collect data on expenditures by private preschools and day care centers. For this study, expenditures for day care centers were estimated from a sample survey of centers conducted in 1990.

Prior to the submission of data for *EAG2*, the U.S. data were reviewed and efforts were made to correct deficiencies identified previously. One major correction was the inclusion in the submission of estimates of omitted expenditures. The most important addition was an estimate of expenditures of private primary and secondary schools; other smaller additions included expenditures for the operation of state education agencies and the U.S. Department of Education. In addition, interlevel transfers were also incorporated into the submission, the most important being the transfer of expenditures for kindergarten and pre-kindergarten classes in primary schools into preprimary education, based on enrollments in these classes. Thus, because the United States had already incorporated most of the required adjustments into its INES data submission, few adjustments to the U.S. data were required.

In summary, only four adjustments were made to the United States' expenditure data. The largest adjustment was the addition of private "center-based" day care to preprimary education expenditures. The second addition was the inclusion of "local match" expenditures for the federal preschool program for low-income children called Head Start. Head Start is funded at the federal

level by the Department of Health and Human Services, but local agencies or enterprises (including some school districts) operate the program and are supposed to provide funds to match a portion of the federal funds. Expenditures of these local match agencies had not been included in the INES submission, so low and high estimates for them were included in the adjustments. Third, expenditures by local school districts for non-educational "community services" were deleted from expenditures for primary–secondary education. Finally, expenditures for debt service were excluded from preprimary and primary-secondary education, since debt service was excluded from expenditures in the operational definition of expenditures used for this study.

No adjustments were needed for tertiary expenditures, as NCES had already made the requisite adjustments in the INES submission. The adjustments included deletion of the amount of expenditures for scholarships and grants from total expenditures and the transfer of an estimated percentage of private tuition and fee revenue derived from grants from private to public expenditures. If the scholarship and grant expenditure amount had not been deleted from total expenditures, tertiary expenditures (and public tertiary expenditures) would have been 2 to 3 percent higher.

Exhibits II-29, II-30a and II-31a summarize expenditure comparability problems by education level and the adjustments made to the U.S. expenditure data to address these problems. Exhibit II-30b provides an overall picture of the effects of the adjustments to the United States' expenditures for all education levels; Exhibit II-31b highlights the effects of adjustments to preprimary, primary-secondary, and tertiary education.

Overall, estimated expenditures for all education levels combined were 1 to 2 percent higher than reported expenditures. All the increase occurred in preprimary education, where estimated expenditures were added for private center-based day care and for the "local match" portion of the federal preschool program for low-income children. Expenditures for

EXHIBIT II-29

Summary of Comparability Problems and Adjustments to the United States' Expenditure Data

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of private expenditures for child care centers.	• Estimate of expenditures based on information from household surveys by the Census Bureau and the federal Department of Education and studies conducted by the Department of Health and Human Services and the Department of Education added to expenditures. Lower bound is 90% of point estimate and upper bound is 110%.
	• Omission of "local match" to the federal Head Start preschool program for low-income children.	• Estimate of local match added to expenditures. Magnitude is supposed to equal 20% of Head Start expenditures, but, in reality, varies. Lower bound estimate put at 15% and upper bound put at 25%. About 40% of local matches emanate from the private sector and about 60% from the public sector.
	• Inclusion of debt service in expenditures.	• Debt service subtracted from expenditures.
Primary-Secondary Education	• Inclusion of expenditures for "community services" — non-education-related expenditures of local public school districts.	• National aggregate total for community services found in the *Digest of Education Statistics* subtracted from expenditures.
	• Inclusion of debt service in expenditures.	• Debt service subtracted from expenditures.
Tertiary Education	• No problems.	• No adjustments.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-30a

Adjustment of the United States' Data on Total Public and Private Expenditures to Improve Comparability (U.S. Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Private "Center-Based" Child Care Added to Expenditures	+10,170	+12,431
Public and Private "Local Match" to Head Start Programs Added to Expenditures	+293	+488
Debt Service Subtracted from Expenditures	-352	-352
Primary-Secondary Education		
"Community Services" of Public Schools Subtracted from Expenditures	-1,206	-1,206
Debt Service Subtracted from Expenditures	-4,145	-4,145
Tertiary Education		
No Adjustments		
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+4,760	+7,216

EXHIBIT II-30b

Summary of Adjustments to the United States' Data on Total Public and Private Expenditures for All Education Levels Combined (U.S. Dollars, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	379,702	384,462	+1.3%	386,918	+1.9%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-31a

Adjustment of the United States' Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (U.S. Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+10,111	+12,567
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+10,111	+12,567
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-5,351	-5,351
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-5,351	-5,351
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	0	0
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	0	0

Note: Details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT II-31b

Summary of Adjustments to the United States' Data on Total Public and Private Expenditures for Preprimary, Primary-Secondary and Tertiary Education (U.S. Dollars, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	21,986	32,097	+46.0%	34,553	+57.2%
Primary-Secondary Education					
Total Expenditures	227,203	221,852	-2.4%	221,852	-2.4%
Tertiary Education					
Total Expenditures	130,513	130,513	+0.0%	130,513	+0.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

primary–secondary education declined by an estimated 2 percent due to the exclusion of expenditures for "community services" — non-educational expenditures by local public school districts — and debt service. Expenditures for tertiary education were unchanged from reported data.

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CHAPTER III

SUMMARY OF ADJUSTMENTS TO COUNTRIES' EXPENDITURES

Introduction

This chapter summarizes the effects of adjustments to the 10 countries' expenditure data to improve comparability. It is organized into four main sections. The first section examines the impact of adjustments to total expenditures, focusing first on the impact of adjustments on public and private expenditures combined and then on the impact of adjustments on public expenditures alone. Within this section, there is a sequential treatment of expenditures for different education levels. It begins with a summary of the effects of adjustments on expenditures for all education levels combined. (All education levels include preprimary education, primary-secondary education, and tertiary education.) It continues with a summary of the impact of adjustments on total expenditures for primary-secondary education and concludes with a summary of the impact of adjustments on total expenditures for tertiary education.[1] Each summary analysis presents the expenditure figures reported by the 10 countries to OECD for *EAG2* and estimated expenditures after adjustments to improve comparability. Using the reported expenditures as a base, the percentage difference between estimated expenditures and reported expenditures is presented and compared across the 10 countries.

The second section examines the effects of adjustments on expenditures per student. This statistic is a measure of the quantity of resources that a country devotes annually, on average, to each student's education. It is calculated by dividing total expenditures for education in national

[1]Appendix B contains exhibits which replicate this analysis for expenditures relative to GDP — an indicator which is used frequently as a measure of a country's "fiscal effort" in support of education. This analysis is excluded from the text because the impact of adjustments on the measure is almost identical in percentage terms to the impact on total expenditures.

currency by the number of full-time-equivalent (FTE) students enrolled at that education level. The result is then converted into equivalent U.S. dollars by dividing expenditures per student by the purchasing power parity (PPP) exchange rate between that country's currency and the U.S. dollar. PPPs are used to convert each country's currency into dollars because they are more stable than ordinary exchange rates, which may fluctuate widely from year to year. In addition, counts of students are adjusted in some countries to correspond to additions of expenditures for new education sectors, such as private preschools, to reported expenditures, or to transfers of expenditures across education levels.[2]

The summary of effects of adjustments on countries' expenditures per student is limited to elementary-secondary education only. It does not examine the effects of adjustments on expenditures per student for all education levels combined or for tertiary education, mainly because of the difficulty in establishing comparable counts of FTE students in tertiary education in countries such as Germany and Austria, which do not differentiate part-time and full-time students.[3] However, the format of the analysis is similar to that described above for total expenditures: each analysis presents the expenditure figures reported to OECD for *EAG2*, estimated expenditures after adjustments, and the percentage difference between estimated expenditures and reported expenditures in the 10 countries.

The third section examines the factors that affect countries' estimated expenditures after adjustments. These factors include the number of countries affected by specific expenditure

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[2]In this analysis, total public and private expenditures are divided by the number of FTE students in public and private schools. Total public expenditures are also divided by the number of FTE students in public and private schools, in part because public funds support private schools quite extensively in many OECD countries. The reported expenditures per student contained in this study may therefore differ from expenditures reported by the OECD in *EAG2*, since the figures reported by the OECD only include public school students in the denominator.

[3]The effect of adjustments on total expenditures per student for all education levels combined and for tertiary education is examined in Appendix C of the report.

adjustments and the magnitude of different types of expenditure adjustments. The chapter concludes with a brief review of the implications of the expenditure adjustments for international comparisons.

Effects of Adjustments on Total Expenditures

Effects of Adjustments on Total Expenditures for All Education Levels Combined

The overall effects of adjustments on total expenditures for all education levels combined are presented in Exhibits III-1a and III-1b. Exhibit III-1a compares the low and high estimates of total public and private expenditures after expenditure adjustments with total public and private expenditures reported to OECD for *EAG2*; Exhibit III-1b compares low and high estimates of total public expenditures only with expenditures reported to OECD.[4]

Public and Private Expenditures

In five of the 10 countries included in the study (Australia, Austria, Sweden, the United Kingdom, and the United States) estimated total public and private expenditures after adjustments were higher than reported expenditures; in five countries (Canada, France, Germany, the Netherlands, and Spain), estimated expenditures after adjustments were lower than reported expenditures. Adjustments to improve comparability increased expenditures most substantially in Austria and the United Kingdom; low estimates of expenditures after adjustments were around 19 percent higher in Austria and 14 percent higher in the United Kingdom than reported expenditures and high estimates were around 26 and 20 percent higher respectively than the figures reported to OECD. Expenditure adjustments resulted in smaller percentage increases in estimated expenditures in Australia and Sweden (5 and 2.5 percent respectively under the low estimate, and

[4]Appendix Exhibits B-1a and B-1b present these analyses for total public and private expenditures relative to GDP and total public expenditures relative to GDP respectively.

EXHIBIT III-1a

Summary of Adjustments to Countries' Data on Total Public and Private Expenditures for All Education Levels Combined (Millions, in Local Currency)

Country	Reported Expenditures	Low Estimate		High Estimate	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	20,741	21,803	+5.1%	22,856	+10.2%
Austria	104,080	123,336	+18.5	131,341	+26.2
Canada	48,263	47,300	-2.0	47,586	-1.4
France	403,920	353,146	-12.6	378,705	-6.2
Germany	141,664	116,023	-18.1	131,040	-7.5
Netherlands	31,340	28,705	-8.4	30,232	-3.5
Spain	3,055,353	2,763,742	-9.5	2,819,250	-7.7
Sweden	85,328	87,447	+2.5	95,914	+12.4
United Kingdom	27,404	31,235	+14.0	32,846	+19.9
United States	379,702	384,462	+1.3	386,918	+1.9

EXHIBIT III-1b

Summary of Adjustments to Countries' Data on Total Public Expenditures for All Education Levels Combined (Millions, in Local Currency)

Country	Reported Expenditures	Low Estimate		High Estimate	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	17,660	18,682	+5.8%	19,331	+9.5%
Austria	104,080	110,975	+6.6	117,661	+13.0
Canada	43,488	42,776	-1.6	42,854	-1.5
France	354,904	330,739	-6.8	349,950	-1.4
Germany	107,664	91,862	-14.7	95,624	-11.2
Netherlands	29,746	26,031	-12.5	26,552	-10.7
Spain	2,447,820	2,183,006	-10.8	2,240,409	-8.5
Sweden	85,328	85,928	+0.7	94,351	+10.6
United Kingdom	27,404	27,949	+2.0	28,897	+5.4
United States	315,509	309,982	-1.8	310,099	-1.7

Source: *International Expenditure Comparability Study*, 1997.

10 and 12 percent under the high estimate), and an even smaller increase in estimated expenditures in the United States (between 1 and 2 percent under both the low and high estimates). Among the countries which showed declines in estimated expenditures after adjustments, the decreases were smallest in Canada (between 1 and 2 percent under both the low and high estimates), but more substantial in France, Germany, the Netherlands, and Spain. Estimated expenditures in these countries were 13, 18, 8, and 9.5 percent lower respectively than reported expenditures under the low estimate, and 6, 8, 3.5, and 8 percent lower respectively than reported expenditures under the high estimate.

Numerous adjustments produced the revised estimates of total public and private expenditures for education in each country. However, a few adjustments that were common to several countries — most notably, adjustments to private expenditures for education and adjustments to expenditures for fringe benefits for teachers and other school employees — had particularly strong effects on estimated expenditures. Estimated net additions of private expenditures represented between 12 and 13 percent of reported public and private expenditures in Austria, between 9 and 11 percent of reported expenditures in the United Kingdom, and between 3 and 7 percent of reported expenditures in the Netherlands; estimated net subtractions of private expenditures represented between 10 and 12 percent of reported public and private expenditures in France. Similarly, estimated additions to expenditures for fringe benefits represented between 8 and 12 percent of reported public and private expenditures in Austria, between 3 and 6 percent of reported expenditures in Australia, and between 3 and 4 percent of reported expenditures in the United Kingdom; estimated subtractions from expenditures represented between 8 and 9 percent of reported expenditures in France.

Public Expenditures

Adjustments to total public expenditures for all education levels generally produced similar effects to those described above for public and private expenditures. In four of the five countries that showed increases in total public and private expenditures after adjustments (Australia, Austria, Sweden, and the United Kingdom), estimated total public expenditures after adjustments were also higher than reported expenditures; and in all five countries that showed decreases in total public and private expenditures after adjustments (Canada, France, Germany, the Netherlands, and Spain), estimated total public expenditures after adjustments were also lower than reported expenditures. In the United States, adjustments produced a slight decrease in estimated total public expenditures.

Although the overall direction of change was the same in most of the 10 countries, adjustments to total public expenditures resulted in smaller percentage changes than adjustments to total public and private expenditures combined just over half the time. The differences between public and private expenditures combined and public expenditures alone were again particularly noticeable in the two countries that showed the largest estimated increases in total public and private expenditures after adjustments (Austria and the United Kingdom) and in France. In Austria, for example, the low estimate of total public expenditures was about 7 percent higher than reported expenditures and the high estimate was about 13 percent higher; in contrast, the estimates of total public and private expenditures were 18.5 and 26 percent higher than reported expenditures.

Effects of Adjustments on Total Expenditures for Primary-Secondary Education

The overall effects of adjustments on total expenditures for primary-secondary education are presented in Exhibits III-2a and III-2b. Exhibit III-2a compares the low and high estimates of total public and private expenditures after adjustments with total public and private

EXHIBIT III-2a

Summary of Adjustments to Countries' Data on Total Public and Private Expenditures for Primary-Secondary Education (Millions, in Local Currency)

Country	Reported Expenditures	Low Estimate		High Estimate	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	13,077	13,614	+4.1%	14,827	+13.4%
Austria	68,292	94,956	+39.0	101,285	+48.3
Canada	31,465	29,125	-7.4	29,413	-6.5
France	264,599	249,285	-5.8	263,857	-0.3
Germany	97,362	83,849	-13.9	95,561	-1.8
Netherlands	19,420	17,557	-9.6	19,262	-0.8
Spain	2,106,098	2,090,499	-0.7	2,117,517	+0.5
Sweden	67,516	65,114	-3.6	71,432	+5.8
United Kingdom	19,308	21,800	+12.9	22,856	+18.4
United States	227,203	221,852	-2.4	221,852	-2.4

EXHIBIT III-2b

Summary of Adjustments to Countries' Data on Total Public Expenditures for Primary-Secondary Education (Millions, in Local Currency)

Country	Reported Expenditures	Low Estimate		High Estimate	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	11,500	11,998	+4.3%	12,793	+11.2%
Austria	68,292	84,554	+23.8	90,249	+32.2
Canada	29,106	27,653	-5.0	27,789	-4.5
France	238,613	244,091	+2.3	254,255	+6.6
Germany	63,362	63,023	-0.5	66,716	+5.3
Netherlands	18,699	15,862	-15.2	16,645	-11.0
Spain	1,829,504	1,671,763	-8.6	1,700,115	-7.1
Sweden	67,516	65,114	-3.6	71,432	+5.8
United Kingdom	19,308	19,461	+0.8	20,184	+4.5
United States	212,836	207,485	-2.5	207,485	-2.5

Source: *International Expenditure Comparability Study*, 1997.

expenditures reported to OECD for *EAG2*; Exhibit III-2b compares low and high estimates of total public expenditures only with expenditures reported to OECD.[5]

Public and Private Expenditures

In three of the 10 countries included in the study (Australia, Austria, and the United Kingdom) estimated total public and private expenditures after adjustments were higher than reported expenditures; in five countries (Canada, France, Germany, the Netherlands, and the United States), estimated total expenditures after adjustments were lower than reported expenditures; in Sweden, estimated total expenditures were slightly lower under the low estimate and higher than reported expenditures under the high estimate; and in Spain, adjusted total expenditures were virtually the same as reported expenditures. Again, adjustments to improve comparability increased expenditures most substantially in Austria and the United Kingdom; low estimates of total expenditures after adjustments in Austria were around 39 percent higher than reported expenditures and high estimates were around 48 percent higher than the figures reported to OECD; the corresponding figures for the United Kingdom were 13 and 18 percent. Expenditure adjustments resulted in smaller percentage increases in estimated total expenditures in Australia (4 percent under the low estimate and 13 percent under the high estimate). Among the countries which showed declines in estimated total expenditures after adjustments, the decreases were largest in Germany and the Netherlands, under the low estimate (14 and 10 percent respectively), and Canada (about 7 percent under both the low and high estimates). Expenditures in the United States declined by just over 2 percent under both the low and high estimates of total expenditures.

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[5]Appendix Exhibits B-2a and B-2b present these analyses for expenditures for primary-secondary education relative to GDP.

Public Expenditures

Adjustments to total public expenditures for primary-secondary education generally produced similar effects to those described above for total public and private expenditures. All three countries that showed increases in public and private expenditures after adjustments (Australia, Austria, and the United Kingdom), also showed increases in total public expenditures after adjustments; three of the five countries that showed decreases in total public and private expenditures after adjustments (Canada, the Netherlands, and the United States) also showed decreases in estimated total public expenditures after adjustments. Sweden also showed similar changes — decreases under the low estimate and increases under the high estimate of total expenditures. However, in three countries, adjustments to total public expenditures produced different effects. In France, adjustments to total public and private expenditures produced a decrease in expenditures, while adjustments to total public expenditures produced an increase; in Spain, adjustments produced a very small increase in total public and private expenditures, but a decrease in total public expenditures under the high estimate; and in Germany, adjustments produced the reverse effect under the high estimate — a decrease in total public and private expenditures and an increase in total public expenditures. In addition, the low estimate of public expenditures in Germany was much closer to reported expenditures than the low estimate of total public and private expenditures combined.

Although the overall direction of change was the same in most of the 10 countries, adjustments to total public expenditures again resulted in smaller percentage changes than adjustments to total public and private expenditures combined in about half the cases. The differences between public and private expenditures combined and public expenditures alone were again particularly noticeable in the two countries that showed the largest estimated increases in total public and private expenditures after adjustment (Austria and the United Kingdom), as well

as in France and Germany, under the low estimate of expenditures. In Austria, the low estimate of total public expenditures was about 24 percent higher than reported expenditures (compared with 39 percent for total public and private expenditures) and the high estimate was about 32 percent higher (compared with 48 percent for total public and private expenditures); the estimates were 1 and 4.5 percent higher for the United Kingdom (compared with 13 and 18 percent for total public and private expenditures). The changes in the other countries were described above.

Effects of Adjustments on Total Expenditures for Tertiary Education

The overall effects of adjustments on total expenditures for tertiary education are presented in Exhibits III-3a and III-3b. Exhibit III-3a compares the low and high estimates of total public and private expenditures after adjustments with total public and private expenditures reported to OECD for *EAG2*; Exhibit III-3b compares low and high estimates of total public expenditures only with expenditures reported to OECD.[6]

Public and Private Expenditures

In five of the 10 countries included in the study (France and the United Kingdom, and Germany, the Netherlands, and Sweden under the high estimate) estimated total public and private expenditures after adjustments were higher than reported expenditures; estimated total expenditures were lower than reported expenditures in seven countries (Australia, Austria, Canada, and Spain, and Germany, the Netherlands, and Sweden under the low estimate); estimated total expenditures were the same in the United States before and after adjustments. Adjustments to improve comparability increased expenditures most dramatically in the United Kingdom and France. Low estimates of total expenditures after adjustments in the United Kingdom were around 38 percent higher than reported expenditures and high estimates were around 58 percent

[6]Appendix Exhibits B-3a and B-3b present these analyses for expenditures for tertiary education relative to GDP.

EXHIBIT III-3a

Summary of Adjustments to Countries' Data on Total Public and Private Expenditures for Tertiary Education (Millions, in Local Currency)

Country	Reported Expenditures	Low Estimate		High Estimate	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	7,445	7,393	-0.7%	7,393	-0.7%
Austria	21,954	19,410	-11.6	19,853	-9.6
Canada	16,798	15,261	-9.1	15,261	-9.1
France	64,978	73,224	+12.7	82,035	+26.3
Germany	23,613	23,219	-1.7	26,805	+13.5
Netherlands	9,070	8,905	-1.8	9,258	+2.1
Spain	523,313	453,141	-13.4	475,819	-9.1
Sweden	15,582	15,433	-1.0	16,689	+7.1
United Kingdom	5,289	7,291	+37.9	8,374	+58.3
United States	130,513	130,513	+0.0	130,513	+0.0

EXHIBIT III-3b

Summary of Adjustments to Countries' Data on Total Public Expenditures for Tertiary Education (Millions, in Local Currency)

Country	Reported Expenditures	Low Estimate		High Estimate	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	5,941	5,933	-0.1%	5,933	-0.1%
Austria	21,954	19,152	-12.8	19,595	-10.7
Canada	14,382	12,945	-10.0	12,945	-10.0
France	52,162	64,078	+22.8	71,665	+37.4
Germany	23,613	22,359	-5.3	23,259	-1.5
Netherlands	8,289	7,990	-3.6	8,305	+0.2
Spain	426,664	359,360	-15.8	383,102	-10.2
Sweden	15,582	15,433	-1.0	16,689	+7.1
United Kingdom	5,289	6,531	+23.5	7,303	+38.1
United States	85,530	85,530	+0.0	85,530	+0.0

Source: *International Expenditure Comparability Study*, 1997.

higher than the figures reported to OECD; the corresponding figures were 13 and 26 percent for France. Among the countries which showed declines in estimated total expenditures after adjustments, the decreases were largest in Spain (between 9 and 13 percent), Austria (between 10 and 12 percent), and Canada (about 9 percent under both the low and high estimates).

Public Expenditures

Adjustments to total public expenditures for tertiary education generally produced similar effects to those described above for total public and private expenditures. Most countries that showed increases in total public and private expenditures after adjustments (France and the United Kingdom, and the Netherlands and Sweden under the high estimate) also showed increases in total public expenditures after adjustments; most countries that showed decreases in total public and private expenditures after adjustments (Australia, Austria, Canada, and Spain, and the Netherlands and Sweden under the low estimate) also showed decreases in estimated total public expenditures after adjustments; total public expenditures for the United States were also unchanged after expenditure adjustments.

As with primary-secondary education, adjustments to total public expenditures for tertiary education did not consistently result in smaller percentage changes than adjustments to total public and private expenditures combined. Adjustments resulted in smaller percentage increases in total public expenditures in the United Kingdom, and in the Netherlands under the high estimate, but larger percentage increases in France. Similarly, adjustments resulted in smaller percentage decreases in total public expenditures in Australia, but larger percentage decreases in Austria, Canada, and Spain. The percentage changes for Sweden and the United States were exactly the same for total public and private expenditures combined and for total public expenditures alone.

Effects of Adjustments on Expenditures Per Student for Primary-Secondary Education

The development of measures of total expenditures per student for primary-secondary education required adjustments to student counts in several countries. These adjustments were required for two reasons: (1) expenditures were transferred between education levels, e.g., from secondary education to tertiary education or vice versa, to make education levels more comparable across countries; and (2) expenditures were transferred from "unallocated" expenditures to primary-secondary education. For this analysis, adjustments were made to student counts in four countries (Australia, Germany, the Netherlands, and the United Kingdom) for the first reason and to student counts in two countries (France and Spain) for the second reason. The adjustments to student counts are provided in the footnote below.[7]

The effects of expenditure adjustments on total education expenditures per student are presented in Exhibits III-4a and III-4b. Exhibit III-4a presents each country's measure of total public and private expenditures per student based on reported expenditures and expenditures after adjustments; Exhibit III-4b presents the same information for each country based on total public expenditures per student.

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[7]The following adjustments were made to public and private primary-secondary FTE enrollments: Australia, 180,297 students were transferred out to preprimary education and 81,290 students were transferred in from tertiary education (TAFE), for a net decrease of 99,007 FTEs; Germany, 362,393 students were transferred out to tertiary education under the low estimate and 296,449 were transferred out under the high estimate for upper secondary students participating in a second upper secondary program; Netherlands, 111,227 students were transferred to tertiary education under the low estimate and 77,859 under the high estimate for MBO education; United Kingdom, 389,013 students were transferred to tertiary education under the low estimate and 197,850 students were transferred to tertiary education under the high estimate for Further Education (FE); France, 218,748 students were transferred in from "unallocated by level," based on the primary-secondary share of unallocated expenditures; Spain, 31,203 students were transferred in from "unallocated by level," based on the primary-secondary share of unallocated expenditures.

EXHIBIT III-4a

Summary of Adjustments to Countries' Data on Total Public and Private Expenditures Per Student for Primary-Secondary Education (U.S. Dollars)

Country	Reported Expenditures[1]	Low Estimate of Expenditures Per Student[2]		High Estimate of Expenditures Per Student[2]	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	$2,626	$2,808	+6.9%	$3,059	+16.5%
Austria	4,313[3]	5,997	+39.0	6,397	+48.3
Canada	5,346[4]	4,949	-7.4	4,998	-6.5
France	4,132	3,813	-7.7	4,030	-2.5
Germany	5,432	4,885	-10.1	5,522	+1.7
Netherlands	3,490	3,299	-5.5	3,571	+2.3
Spain	2,547[5]	2,518	-1.1	2,550	+0.1
Sweden	6,051[3]	5,836[3]	-3.6	6,402[3]	+5.8
United Kingdom	3,350[3]	3,941	+17.6	4,048	+20.8
United States	5,555	5,424	-2.4	5,424	-2.4

[1]Reported expenditures per student are calculated by dividing total expenditures from public and private sources by FTE enrollments in all public and private schools.
[2]Estimated expenditures per student are calculated by dividing total expenditures from public and private sources by *adjusted* enrollments in all public and private schools.
[3]Public and private expenditures per student not reported in *EAG2;* these are public expenditures only.
[4]Expenditures per student not reported in *EAG2*; this figure is based on data in the OECD database.
[5]Expenditures per student differ from figure reported in *EAG2*. The figure in this report is based on a revised data submission that was not incorporated into *EAG2*.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT III-4b

Summary of Adjustments to Countries' Data on Total Public Expenditures Per Student for Primary-Secondary Education (U.S. Dollars)

Country	Reported Expenditures[1]	Low Estimate of Expenditures Per Student[2]		High Estimate of Expenditures Per Student[2]	
	(Currency)	(Currency)	(Percent Change)	(Currency)	(Percent Change)
Australia	$2,309[3]	$2,475	+7.2%	$2,639	+14.3%
Austria	4,313	5,340	+23.8	5,700	+32.2
Canada	4,945[3]	4,699	-5.0	4,722	-4.5
France	3,726	3,729	+0.1	3,885	+4.3
Germany	3,535[3]	3,671	+3.8	3,856	+9.1
Netherlands	3,361[3]	2,980	-11.3	3,086	-8.2
Spain	2,213[4]	2,014	-9.0	2,047	-7.5
Sweden	6,051	5,836	-3.6	6,402	+5.8
United Kingdom	3,350	3,518	+5.0	3,575	+6.7
United States	5,204	5,073	-2.5	5,073	-2.5

[1]Reported expenditures per student are calculated by dividing total expenditures from public sources by FTE enrollments in all public and private schools; figures reported in *EAG2* are calculated by dividing public expenditures by FTE enrollments in public and government-dependent private schools.
[2]Estimated expenditures per student are calculated by dividing total public expenditures by *adjusted* FTE enrollments in all public and private schools.
[3]Expenditures per student not reported in *EAG2*; this figure is based on data in the OECD database.
[4]Expenditures per student differ from figure reported in *EAG2*. The figure in this report is based on a revised data submission that was not incorporated into *EAG2*.

Source: *International Expenditure Comparability Study*, 1997.

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Public and Private Expenditures

The effects of adjustments to public and private expenditures per student for primary-secondary education were similar to those described above for total expenditures. Estimated total public and private expenditures per student after adjustments were higher than reported expenditures per student in Australia, Austria, and the United Kingdom, and Germany, the Netherlands, and Sweden under the high estimate; they were lower in Canada, France, and the United States, and Germany, the Netherlands, Spain, and Sweden under the low estimate. Expenditure adjustments produced the largest increases on the measure in Austria, where total expenditures per student increased by 39 and 48 percent, and the United Kingdom, where total expenditures per student increased by 18 and 21 percent; expenditure adjustments produced the largest decreases on the measure in Canada (around 7 percent under both estimates), France and Germany (about 8 and 10 percent respectively under the low estimate).

Public Expenditures

The effects of adjustments on total public expenditures per student were a little different from those described above for public and private expenditures per student. Estimated total public expenditures per student after adjustments were higher than reported expenditures per student in Australia, Austria, France, Germany, and the United Kingdom, and Sweden under the high estimate; estimated expenditures were lower in Canada, the Netherlands, Spain, and the United States, and Sweden under the low estimate. Expenditure adjustments produced the largest increases on the measure in Austria, where expenditures per student increased by 24 and 32 percent; Australia, where expenditures increased by 7 and 14 percent; and the United Kingdom, where the measure increased by 5 and 7 percent. Expenditure adjustments produced the largest decreases on the measure in the Netherlands (between 8 and 11 percent), Spain (between 7.5 and 9 percent), and Canada (about 5 percent under both estimates).

Summary of the Effects of Adjustments on Countries' Expenditures

A range of adjustments were made to countries' expenditures to address comparability problems highlighted in Volume I of this report. These adjustments were designed to improve the quality of countries' expenditure data by: (1) filling in "gaps" in countries' expenditures through estimates of "missing" expenditures for different education sectors or activities; (2) eliminating from countries' reported data expenditures that go beyond the operational definition of expenditures used in the study; (3) standardizing expenditures for such activities as retirement benefits in cases where countries use significantly different methods of estimating or reporting expenditures; and (4) standardizing expenditures for education levels, e.g., primary-secondary education, by transferring expenditures across education levels or from "unallocated" expenditures to the appropriate education level. The estimates contained in the adjustments were in some cases based on very great assumptions; they nonetheless represented our "best guesses" about expenditures based on information made available to us from countries that participated in the study. It should not be assumed that estimated expenditures developed in this report represent the "correct" figures for each country. Rather, they provide a possible range for each country's expenditures and a basis for assessing how much adjustments to improve comparability problems affect countries' standings on key finance indicators.

Effects of Adjustments on Total Expenditures

Several important findings emerged from the adjustment of countries' data to improve expenditure comparability. **First, adjustments to total expenditures produced changes to all countries' expenditures, but the effects of adjustments were relatively small in most countries.** Under the low estimate, total public and private expenditures changed by less than ± 10 percent in at least half the countries for primary-secondary education, tertiary education, and for all education levels combined; expenditures changed by less than ± 15 percent in eight of the

10 countries for all education levels combined and in nine of the 10 countries for primary-secondary and tertiary education (Exhibit III-5a). No country showed a change of more than ± 15 percent from reported expenditures for all education levels combined, and separately for primary-secondary education and tertiary education.

Under the high estimate of expenditures the patterns were quite similar. Total public and private expenditures also changed by less than ± 10 percent in at least half the countries for primary-secondary education and tertiary education, and for all education levels combined; expenditures changed by less than ± 15 percent in eight of the 10 countries for all education levels combined, for primary-secondary education, and for tertiary education. Expenditures after adjustments changed by more than ± 15 percent from reported expenditures at all education levels, and separately for primary-secondary education and tertiary education only in the United Kingdom.

Second, adjustments to improve comparability produced smaller relative changes in expenditures for primary-secondary education than for tertiary education. Under the low estimate, total public and private expenditures for primary-secondary education changed by less than ± 10 percent in *seven* countries, but in six countries for tertiary education (Exhibit III-5b).[8] Similarly, total public expenditures for primary-secondary education changed by less than ± 10 percent in *eight* countries under the low estimate, but in five countries for tertiary education; under the high estimate the number of countries was *seven* for primary-secondary education and five for tertiary education. Estimated expenditures for public primary-secondary education changed by more than ± 15 percent only in Austria — based on both the high and low adjustments to expenditures.

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[8]Total public and private expenditures under the high estimate changed by less than ± 10 percent in six countries for both primary-secondary and tertiary education.

EXHIBIT III-5a

Number of Countries Demonstrating Different Percentage Changes between Reported and Estimated Total Public and Private Expenditures

Ranges of Percentage Change in Expenditures	All Education Levels		Primary-Secondary Education		Tertiary Education	
	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures
No Change to ± 4.9%	3	3	4	5	5	3
± 5.0 to ± 9.9%	3	3	3	2	1	4
± 10.0 to ± 14.9%	2	2	2	1	3	1
± 15.0% and Above	2	2	1	2	1	2

EXHIBIT III-5b

Number of Countries Demonstrating Different Percentage Changes between Reported and Estimated Total Public Expenditures

Ranges of Percentage Change in Expenditures	All Education Levels		Primary-Secondary Education		Tertiary Education	
	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures
No Change to ± 4.9%	4	3	6	3	4	4
± 5.0 to ± 9.9%	3	3	2	4	1	1
± 10.0 to ± 14.9%	3	4	0	2	2	3
± 15.0% and Above	0	0	2	1	3	2

Source: *International Expenditure Comparability Study*, 1997.

Third, adjustments to improve comparability produced smaller relative changes in total public expenditures alone than in total public and private expenditures, except at the tertiary education level. Total public expenditures for all education levels combined changed by less than ± 10 percent under the low estimate in *seven* countries, while total public and private expenditures combined changed by less than ± 10 percent in six countries. Similarly, total public expenditures changed by less than ± 15 percent *in all 10 countries* under the low estimate, while total public and private expenditures combined changed by less than ± 15 percent in eight countries. Under the high estimate, the results were similar. Both total public expenditures alone and total public and private expenditures combined changed by less than ± 10 percent in *six* countries, but changes of less than ± 15 percent were found in *all 10 countries* for total public expenditures alone, compared with eight countries for public and private expenditures combined.

Adjustments to expenditures for primary-secondary education produced fairly similar effects. Total public expenditures under the low estimate changed by less than ± 10 percent in *eight* countries, while for total public and private expenditures combined this level of change was found in seven countries. However, under the high estimate, *seven* countries showed changes of ± 10 percent for total public expenditures alone and for total public and private expenditures combined. As stated above, only one country, Austria, showed changes of more than ± 15 percent in total public expenditures for primary-secondary education — based on both the low and high estimates of expenditures.

In contrast, adjustments to expenditures for tertiary education produced smaller changes in total public and private expenditures combined that in total public expenditures alone. Under the low estimate, total public expenditures alone changed by less than ± 10 percent in five countries, while this level of change was shown in six countries for total public and private expenditures combined. Under the high estimate, five countries showed changes of less than ± 10 percent for

total public expenditures alone, while seven countries showed this level of change for total public and private expenditures combined.

Effects of Adjustments on Total Expenditures Per Student

As with total expenditures, adjustments to total expenditures per student for primary-secondary education produced changes in all countries' expenditures, but the effects of adjustments were again relatively small in a majority of countries. Under the low estimate, adjustments to total public and private expenditures per student produced changes in expenditures of less than ± 10 percent in over half the countries and changes of less than ± 15 percent in eight of the 10 countries. Under the high estimate, adjustments also produced changes in expenditures of less than ± 10 percent in over half the countries, but three of the 10 countries showed changes of ± 15 percent in total expenditures per student (Exhibit III-5c).

EXHIBIT III-5c

Number of Countries Demonstrating Different Percentage Changes between Reported and Estimated Total Expenditures Per Student for Primary-Secondary Education

Ranges of Percentage Change in Expenditures	Public and Private Expenditures Per Student		Public Expenditures Per Student	
	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures
No Change to ± 4.9%	3	5	4	3
± 5.0 to ± 9.9%	4	2	4	5
± 10.0 to ± 14.9%	1	0	1	1
± 15.0% and Above	2	3	1	1

Source: *International Expenditure Comparability Study*, 1997.

Adjustments to improve comparability produced smaller relative changes in total public expenditures per student alone than in total public and private expenditures per student. Under the low estimate, total public expenditures per student after adjustments changed by less than ± 10 percent in *eight* countries, but this level of change was found in seven countries for total public and private expenditures combined; changes of less than ± 15 percent were also found in *nine* countries for total public expenditures per student, but in eight countries for total public and private expenditures per student. Similarly, under the high estimate, total public expenditures per student changed by ± 10 percent in *eight* countries, while total public and private expenditures per student changed by ± 10 percent in seven countries. Finally, total public expenditures per student changed by less than ± 15 percent in *nine* countries, but in seven countries for total public and private expenditures per student.

Factors Affecting Countries' Estimated Expenditures after Adjustments

Although adjustments to countries' expenditures to improve comparability increased or decreased expenditures in all 10 countries included in the study, the estimated change was less than ± 15 percent in a large majority of countries at all education levels. Several factors may be responsible for this outcome.

First, only a small number of expenditure comparability problems are common to multiple countries in the study. A review of the expenditure adjustments contained in this chapter's exhibits identified a total of 15 different types of adjustments to countries' data on total public and private expenditures for primary-secondary education. However, of these 15 adjustments, only four were common to at least five of the 10 countries. These were: (1) changes to expenditures to standardize the treatment of pension contributions; (2) the addition of private expenditures by or for private institutions; (3) the addition of expenditures for adult education; and

(4) the subtraction of expenditures for student living expenses. Two other expenditure adjustments — the addition of expenditures by local governments for different types of support services, and the standardization of private expenditures for apprenticeship programs — were common to four countries, but the other eight adjustments were made to expenditures in three or fewer countries.

Similar results were found for tertiary education. For this education level, a total of 19 different adjustments were made to countries' data on total public and private expenditures. Here, however, only one adjustment was common to half the countries, namely, the exclusion of public subsidies for student living expenses from expenditures. Two other adjustments, i.e., the standardization of expenditures for pension contributions, and the addition of expenditures for research conducted at universities, were common to four countries, but 12 of the other 16 adjustments were unique to particular countries. The analysis therefore suggests that, while expenditure data submitted to the OECD for *EAG2* contained a large number of comparability problems, only a limited number of problems affected more than a few countries.

A second factor contributing to the relatively small change in estimated expenditures for most countries is the relatively small magnitude of most of the comparability problems. Here again, a review of the expenditure adjustments presented earlier in the chapter highlights the point. Altogether, a total of 50 adjustments were made to total public and private expenditures for primary-secondary education to improve the comparability of data countries reported to the OECD for *EAG2*. However, under the low estimate of expenditures, nearly three-fourths of the adjustments were less than ± 5 percent of reported expenditures and about 90 percent were less than ± 10 percent of reported expenditures (Exhibits III-6a and III-6b). Only one expenditure adjustment, the exclusion of private expenditures for the compensation of apprentices in Germany, was more than ± 15 percent of reported expenditures. Under the high estimate of expenditures,

EXHIBIT III-6a

Number and Percent of Adjustments to Total Public and Private Expenditures in Different Ranges of Percentage Change

Ranges of Percentage Change in Adjustments	Primary-Secondary Education				Tertiary Education			
	Low Estimate of Expenditures		High Estimate of Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Number	Percent[1]	Number	Percent[1]	Number	Percent[1]	Number	Percent[1]
No Change to ± 4.9%	36	72.0%	32	64.0%	20	52.6%	20	52.6%
± 5.0 to ± 9.9%	9	18.0	11	22.0	8	21.1	7	18.4
± 10.0 to ± 14.9%	4	8.0	6	12.0	1	2.6	2	5.3
± 15.0% and Above	1	2.0	1	2.0	9	23.7	9	23.7
All Changes	50	100.0%	50	100.0%	38	100.0%	38	100.0%

EXHIBIT III-6b

Number and Percent of Adjustments to Total Public Expenditures in Different Ranges of Percentage Change

Ranges of Percentage Change in Adjustments	Primary-Secondary Education				Tertiary Education			
	Low Estimate of Expenditures		High Estimate of Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Number	Percent[1]	Number	Percent[1]	Number	Percent[1]	Number	Percent[1]
No Change to ± 4.9%	23	67.6%	22	64.7%	12	40.0%	12	40.0%
± 5.0 to ± 9.9%	8	23.5	8	23.5	7	23.3	7	23.3
± 10.0 to ± 14.9%	3	8.8	4	11.8	2	6.7	2	6.7
± 15.0% and Above	0	0.0	0	0.0	9	30.0	9	30.0
All Changes	34	100.0%	34	100.0%	30	100.0%	30	100.0%

[1]Percentages may not sum to 100 percent due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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the percentages were slightly lower, but still, a large majority of adjustments to expenditures were less than ± 10 percent of reported expenditures.

At the tertiary education level, the pattern was not quite as strong. About half the 38 adjustments to total public and private expenditures for tertiary education were less than ± 5 percent of reported expenditures, and about three-fourths of the adjustments were less than ± 10 percent of reported expenditures under the low estimate of expenditures; the percentages were quite similar under the high estimate. However, several adjustments, including the exclusion of operating expenditures for university hospitals, the addition of expenditures for research conducted at universities, the addition of expenditures for adult education provided in tertiary institutions, and the subtraction of expenditures for student living expenses, were more than ± 15 percent of reported expenditures. All of these were areas in which ambiguous reporting instructions in the *EAG2* data collection resulted in different reporting of data by different countries.

A third factor contributing to the relatively small change in estimated expenditures is the fact that, in some countries, additions to expenditures to address some comparability problems were offset by subtractions from expenditures to address different problems. A few countries may have underreported expenditures in some areas, but overreported expenditures in other areas. This was the situation in France, Germany, Spain, and Sweden in both primary-secondary and tertiary education and in Austria and the United Kingdom in tertiary education.

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CHAPTER IV

EFFECTS OF ADJUSTMENTS TO COUNTRIES' EXPENDITURES ON SELECTED FINANCE INDICATORS

Introduction

This chapter presents an analysis of the effects of adjustments to countries' expenditure data on two key indicators of countries' overall investments in education. The first indicator used in the analysis is education expenditures relative to gross domestic product (GDP). It is defined as education expenditures divided by GDP; both expenditures and GDP are expressed in each country's national currency. This indicator is often used as a measure of a country's "fiscal effort" in support of education or, put differently, as a country's financial commitment to education relative to other functions and activities. The analysis of this indicator compares each country's ratio of total education expenditures to GDP before and after adjustments to expenditures, and each country's ranking on the indicator before and after expenditure adjustments. The impact of adjustments to expenditures on this indicator is presented both for total both public and private expenditures combined as well as for total public expenditures alone.

The second indicator used in this analysis is education expenditures per student. As stated in Chapter III, this indicator is a measure of the quantity of resources that a country devotes annually, on average, to each student's education. The indicator is calculated by dividing total expenditures for education in national currency by the number of full-time-equivalent (FTE) students enrolled at that education level. The result is then converted into equivalent U.S. dollars by dividing expenditures per student by the purchasing power parity (PPP) exchange rate between that country's currency and the U.S. dollar.

The analyses presented here follow the format described above for education expenditures relative to GDP. The analysis compares each country's education expenditures per student before and after adjustments to expenditures and each country's ranking on the indicator before and after expenditure adjustments. Again, the analysis assesses the impact of adjustments to expenditures on this indicator using both total public and private expenditures combined, as well as total public expenditures alone, as the measure of investment in education.

The analyses are designed to depict the relative standing of countries on each of these key education measures before and after expenditure adjustments and to determine whether adjustments affect conclusions about countries' overall levels of investment in education. For this purpose, the analyses have focused primarily on countries' rankings on the indicator based on reported and estimated expenditures. Although rankings are not as sophisticated as other types of comparisons, they nonetheless provide a mechanism for analysts and policy makers to get a quick snapshot of how countries stand on the indicator in relation to each other, particularly when coupled with a comparison of differences in countries' relative values on the indicator.

In addition to education expenditures relative to GDP and education expenditures per student, other indicators included in *EAG2* and other international comparisons were considered for the analysis. These indicators included: education expenditures as a share of total public expenditures; the sources of funds for education; the allocation of funds for different education levels; and expenditures for different types of activity, e.g., current vs. capital expenditures, employee compensation vs. other operating expenditures. We chose, however, to focus on the two indicators discussed above for three main reasons. First, and most important, these indicators are the broadest indicators of countries' overall investment in education and are therefore of primary concern to policy makers. Second, these are the measures that have been at the core of debates about U.S. investment in education relative to other countries. Finally, the adjustments

included in the comparability analysis were in many cases too crude to generate good estimates of expenditures required to calculate the other indicators. We therefore felt that it was inappropriate to compare countries on these indicators using reported and adjusted expenditures.

Effects of Adjustments on Total Expenditures Relative to GDP

The effects of adjustments on total expenditures relative to GDP are presented sequentially, beginning with total expenditures for all education levels combined, followed by total expenditures for primary-secondary education, and concluding with total expenditures for tertiary education.

Total Expenditures Relative to GDP for All Education Levels Combined

The effects of adjustments on expenditures for all education levels combined relative to GDP are presented in Exhibits IV-1a and IV-1b. Exhibit IV-1a presents each country's indicator of total public and private expenditures relative to GDP based on reported and estimated expenditures after adjustments; Exhibit IV-1b presents the same information for each country based on total public expenditures relative to GDP.

Public and Private Expenditures

The 10-country mean of total public and private expenditures for all education levels relative to GDP showed a very small decrease under the low estimate of expenditures (-1.2 percent) and a small increase under the high estimate (3.9 percent), compared to reported expenditures relative to GDP (Exhibit IV-2a). However, the ratio of the highest country's to the lowest country's value of this indicator increased under the low estimate and decreased under the high estimate of expenditures. The ratio of the highest to the lowest country's value on the indicator was about 9.5 percent higher than the ratio for reported expenditures based on the low estimate, but about 2.7 percent lower based on the high estimate (Exhibit IV-3a).

EXHIBIT IV-1a

Impact of Adjustments on Public and Private Expenditures Relative to GDP for All Education Levels Combined

Country	Reported Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank
Australia	5.47	7	5.75	5	6.03	5
Austria	5.44[2]	8	6.44	3	6.86	4
Canada	7.28	1	7.14	1	7.18	1
France	5.97	4	5.22	8	5.60	7
Germany	5.42	9	4.44	10	5.02	10
Netherlands	5.77	5	5.28	7	5.56	8
Spain	5.58	6	5.04	9	5.15	9
Sweden	6.13[3]	3	6.29[4]	4	6.90[4]	3
United Kingdom	4.94[2,3]	10	5.63	6	5.92	6
United States	6.86	2	6.94	2	6.99	2
10- Country Mean	5.89	—	5.82	—	6.12	—

[1]Expenditures relative to GDP presented in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from the unpublished OECD database and differ from published data for Canada and the United States due to rounding.
[2]Public expenditures only.
[3]Expenditures from unpublished OECD database differ from published data in *EAG2*.
[4]Public and private expenditures for preprimary education; public expenditures for primary-secondary and tertiary education.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT IV-1b

Impact of Adjustments on Public Expenditures Relative to GDP for All Education Levels Combined

Country	Reported Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank
Australia	4.66	8	4.93	6	5.10	7
Austria	5.44	5	5.80	3	6.14	3
Canada	6.56	1	6.46	1	6.47	2
France	5.25	6	4.89	7	5.17	6
Germany	4.12	10	3.52	10	3.66	10
Netherlands	5.47	4	4.79	8	4.88	8
Spain	4.47	9	3.98	9	4.09	9
Sweden	6.13[2]	2	6.18	2	6.78	1
United Kingdom	4.94[2]	7	5.04	5	5.21	5
United States	5.70	3	5.60	4	5.60	4
10- Country Mean	5.27	—	5.12	—	5.31	—

[1]Expenditures relative to GDP presented in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from the unpublished OECD database and
differ from published data for Canada, France, Germany, the Netherlands, and the United States due to rounding.
[2]Expenditures from unpublished OECD database differ from published data in *EAG2*.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT IV-2a

10- Country Means on Total Public and Private Expenditures Relative to GDP

Expenditures Relative to GDP	All Education Levels		Primary-Secondary Education		Tertiary Education	
	10-Country Mean	Difference between Reported and Estimated Expenditures	10-Country Mean	Difference between Reported and Estimated Expenditures	10-Country Mean	Difference between Reported and Estimated Expenditures
Reported Expenditures	5.89	—	3.93	—	1.46	—
Low Estimate of Expenditures	5.82	-1.2%	3.95	+0.5%	1.45	-0.7%
High Estimate of Expenditures	6.12	+3.9%	4.19	+6.6%	1.52	+4.1%

EXHIBIT IV-2b

10- Country Means on Total Public Expenditures Relative to GDP

Expenditures Relative to GDP	All Education Levels		Primary-Secondary Education		Tertiary Education	
	10-Country Mean	Difference between Reported and Estimated Expenditures	10-Country Mean	Difference between Reported and Estimated Expenditures	10-Country Mean	Difference between Reported and Estimated Expenditures
Reported Expenditures	5.27	—	3.59	—	1.25	—
Low Estimate of Expenditures	5.12	-2.8%	3.57	-0.6%	1.23	-1.6%
High Estimate of Expenditures	5.31	+0.8%	3.73	+3.9%	1.28	+2.4%

— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT IV-3a

Ratio of Highest to Lowest Country's Value on Total Public and Private Expenditures Relative to GDP

Expenditures Relative to GDP	All Education Levels		Primary-Secondary Education		Tertiary Education	
	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures
Reported Expenditures	1.47	—	1.41	—	2.82	—
Low Estimate of Expenditures	1.61	+9.5%	1.55	+9.9%	2.84	+0.7%
High Estimate of Expenditures	1.43	-2.7%	1.49	+5.7%	2.71	-3.9%

EXHIBIT IV-3b

Ratio of Highest to Lowest Country's Value on Total Public Expenditures Relative to GDP

Expenditures Relative to GDP	All Education Levels		Primary-Secondary Education		Tertiary Education	
	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures
Reported Expenditures	1.59	—	2.00	—	2.82	—
Low Estimate of Expenditures	1.84	+15.7%	1.94	-3.0%	2.95	+4.6%
High Estimate of Expenditures	1.85	+16.4%	2.02	+1.0%	2.79	-1.1%

— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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The adjustments to total public and private expenditures produced some differences in countries' rankings on the indicator. On the one hand, two or three of the 10 countries showed no change in their rankings and two or four countries changed their rankings by one or two places. On the other hand, four or five of the 10 countries changed their rankings by three or more places. However, adjustments to expenditures did not alter the position of the United States on this measure relative to other countries. Both before and after expenditure adjustments, the United States ranked near the top of the group on public and private expenditures relative to GDP, second only to Canada on this indicator.

Public Expenditures

As with total public and private expenditures, the 10-country mean for total public expenditures relative to GDP also showed a small decrease under the low estimate (-2.8 percent). Under the high estimate, total public expenditures relative to GDP also increased relative to reported expenditures, but the increase of 0.8 percent was smaller than the increase for total public and private expenditures relative to GDP (Exhibit IV-2b). In contrast with total public and private expenditures, the ratio on this indicator between the countries with the highest and lowest values increased both under the low and high estimates of expenditures — by 15.7 percent and 16.4 percent respectively (Exhibit IV-3b).

The adjustments to total public expenditures produced only marginal differences in countries' rankings on the indicator. Under the low estimate, four of the 10 countries showed no change in their rankings and *nine countries* changed their rankings by two places or less; under the high estimate, three countries showed no change in their rankings and nine countries again changed by two places or less. Moreover, adjustments to expenditures slightly altered the position of the United States on this measure relative to other countries. Before expenditure adjustments,

the United States ranked third among the 10 countries; after adjustments, the United States ranked fourth.

Total Expenditures Relative to GDP for Primary-Secondary Education

The effects of adjustments on expenditures for primary-secondary education relative to GDP are presented in Exhibits IV-4a and IV-4b. Exhibit IV-4a presents each country's indicator of total public and private expenditures relative to GDP based on reported and estimated expenditures after adjustments; Exhibit IV-4b presents the same information for each country based on total public expenditures relative to GDP.

Public and Private Expenditures

The 10-country mean of total public and private expenditures for primary-secondary education relative to GDP showed a slight increase under the low estimate of expenditures (0.5 percent) and a slightly larger increase under the high estimate (6.6 percent), compared to reported expenditures relative to GDP. In addition, the ratio of the highest country's to the lowest country's value on this indicator increased substantially under the low estimate and by a lesser amount under the high estimate of expenditures. The ratio based on the low estimate was about 9.9 percent higher than the ratio for reported expenditures, and the ratio for the high estimate was about 5.0 percent higher.

The adjustments to total public and private expenditures produced some differences in countries' rankings on the indicator. On the one hand, six countries changed their rankings by one or two places under the low estimate, and three changed their rankings by one or two places under the high estimate. On the other hand, four of the 10 countries under the low estimate — and seven of the 10 countries under the high estimate — changed their rankings by more than two places. In addition, adjustments to expenditures did have some effect on the position of the United States on this measure relative to other countries; the United States moved from third to

EXHIBIT IV-4a

Impact of Adjustments on Public and Private Expenditures Relative to GDP for Primary-Secondary Education

Country	Reported Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank
Australia	3.45	10	3.59	8	3.91	6
Austria	3.57[2]	7.5	4.97	1	5.29	1
Canada	4.75[3]	2	4.40	3	4.44	3
France	3.91[3]	4	3.68	7	3.90	7
Germany	3.73	6	3.21	10	3.66	9
Netherlands	3.57	7.5	3.23	9	3.54	10
Spain	3.84	5	3.82	6	3.86	8
Sweden	4.85[2,4]	1	4.68[2]	2	5.14[2]	2
United Kingdom	3.48[2,4]	9	3.93	5	4.12	4
United States	4.10	3	4.01	4	4.01	5
10- Country Mean	3.93	—	3.95	—	4.19	—

[1]Expenditures relative to GDP presented in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from the unpublished OECD database and differ from published data for Australia, Germany, Sweden, and the United States due to rounding.
[2]Public expenditures only.
[3]Public and private expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.
[4]Expenditures from unpublished OECD database differ from published data in *EAG2*.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT IV-4b

Impact of Adjustments on Public Expenditures Relative to GDP for Primary-Secondary Education

Country	Reported Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank
Australia	3.03	9	3.16	7	3.37	7
Austria	3.57	4	4.42	2	4.71	2
Canada	4.39[2]	2	4.17	3	4.19	3
France	3.53[2]	5	3.61	5	3.76	4
Germany	2.43	10	2.41	10	2.55	10
Netherlands	3.44	7	2.92	9	3.06	9
Spain	3.34	8	3.05	8	3.10	8
Sweden	4.85	1	4.68	1	5.14	1
United Kingdom	3.48[3]	6	3.51	6	3.64	6
United States	3.84	3	3.75	4	3.75	5
10- Country Mean	3.59	—	3.57	—	3.73	—

[1]Expenditures relative to GDP presented in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from the unpublished OECD database and differ from published data for Germany, the Netherlands, and Sweden due to rounding.
[2]Public expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.
[3]Expenditures from unpublished OECD database differ from published data in *EAG2*.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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fourth under the low estimate of expenditures and from third to fifth under the high estimate of expenditures.

Public Expenditures

In contrast with total public and private expenditures, the 10-country mean for total public expenditures for primary-secondary education relative to GDP showed a small decrease under the low estimate (-0.6 percent) and a slightly lower increase (3.9 percent, compared with 6.6 percent for public and private expenditures combined) under the high estimate. The ratio between the countries with the highest and lowest values on the indicator decreased slightly under the low estimate (-3.0 percent), but increased slightly (1.0 percent) under the high estimate, compared to reported expenditures relative to GDP.

The adjustments to total public expenditures produced only marginal differences in countries' rankings on the indicator. Under the low estimate, five of the 10 countries showed no change in their rankings and *all 10 countries* changed their rankings by two places or less; under the high estimate, four countries showed no change in their rankings and all 10 countries changed by two places or less. However, adjustments to total public expenditures had the same effect on the position of the United States on this measure relative to other countries as for total public and private expenditures; the United States moved from a ranking of third to fourth under the low estimate and from third to fifth under the high estimate of expenditures.

Total Expenditures Relative to GDP for Tertiary Education

The effects of adjustments on expenditures for tertiary education relative to GDP are presented in Exhibits IV-5a and IV-5b. Exhibit IV-5a presents each country's indicator of total public and private expenditures relative to GDP based on reported and estimated expenditures after adjustments; Exhibit IV-5b presents the same information for each country based on total public expenditures relative to GDP.

EXHIBIT IV-5a

Impact of Adjustments on Public and Private Expenditures Relative to GDP for Tertiary Education

Country	Reported Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank
Australia	1.96	3	1.95	3	1.95	3
Austria	1.15[2]	5	1.01	8	1.04	8
Canada	2.54	1	2.30	2	2.30	2
France	0.97[3]	7	1.08	7	1.21	6
Germany	0.90	10	0.89	9	1.03	9
Netherlands	1.67	4	1.64	4	1.70	4
Spain	0.96	8	0.83	10	0.87	10
Sweden	1.12[2]	6	1.11[2]	6	1.20[2]	7
United Kingdom	0.95[2]	9	1.31	5	1.51	5
United States	2.36	2	2.36	1	2.36	1
10-Country Mean	1.46	—	1.45	—	1.52	—

[1]Expenditures relative to GDP reported in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from the unpublished OECD database and differ from published data for Austria, Canada, and Sweden due to rounding.
[2]Public expenditures only.
[3]Public and private expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT IV-5b

Impact of Adjustments on Public Expenditures Relative to GDP for Tertiary Education

Country	Reported Expenditures		Low Estimate of Expenditures		High Estimate of Expenditures	
	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank	Expenditures Relative to GDP[1]	Rank
Australia	1.57	2	1.56	2	1.56	2
Austria	1.15	5	1.00	7	1.02	8
Canada	2.17	1	1.95	1	1.95	1
France	0.77[2]	10	0.95	8	1.06	7
Germany	0.90	8	0.86	9	0.89	9
Netherlands	1.52	4	1.47	4	1.53	4
Spain	0.78	9	0.66	10	0.70	10
Sweden	1.12	6	1.11	6	1.20	6
United Kingdom	0.95	7	1.18	5	1.32	5
United States	1.54	3	1.54	3	1.54	3
10-Country Mean	1.25	—	1.23	—	1.28	—

[1]Expenditures relative to GDP reported in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from the unpublished OECD database and differ from published data for Austria, the Netherlands, Swedem, and the United States due to rounding.
[2]Public expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

Public and Private Expenditures

The 10-country mean of total public and private expenditures for tertiary education relative to GDP showed a small decrease under the low estimate of expenditures (-0.7 percent) and a small increase under the high estimate (4.1 percent), compared to reported expenditures relative to GDP. However, the ratio on this indicator between the countries with the highest and lowest values showed only a negligible increase under the low estimate (0.7 percent) and a small decrease under the high estimate (-3.9 percent), compared with reported expenditures relative to GDP.

In contrast with both total public and private expenditures for all education levels combined and total public and private expenditures for primary-secondary education, adjustments to total public and private expenditures for tertiary education produced only modest changes in countries' rankings on expenditures relative to GDP. Under the low estimate, four of the 10 countries showed no change in their rankings and eight countries changed their rankings by two places or less; under the high estimate, two countries showed no change in their rankings and eight of the 10 countries again changed by two places or less. Moreover, adjustments to expenditures had a small effect on the position of the United States on this measure relative to other countries. The United States went from second to first in the rankings based on both the low and high estimates of expenditures.

Public Expenditures

As with total public and private expenditures, the 10-country mean of total public expenditures for tertiary education relative to GDP showed a small decrease under the low estimate of expenditures (-1.6 percent) and a small increase under the high estimate (2.4 percent), compared to reported expenditures relative to GDP. The ratio on this indicator between the countries with the highest and lowest values also showed a small increase under the low estimate

(4.6 percent) and a small decrease under the high estimate (-1.1 percent), compared with reported expenditures relative to GDP.

Again, adjustments to total public expenditures for tertiary education produced only modest changes in countries' rankings on expenditures relative to GDP. Under the low estimate, five of the 10 countries showed no change in their rankings and *all 10 countries* changed their rankings by two places or less; under the high estimate, five countries showed no change in their rankings and eight of the 10 countries changed by two places or less. Furthermore, adjustments to expenditures again had little effect on the position of the United States on this measure relative to other countries. The United States remained at third in the rankings based on both the low and high estimates of expenditures.

Effects of Adjustments on Total Expenditures Per Student for Primary-Secondary Education

This section presents the effects of adjustments to expenditures on total expenditures for students. In contrast with the previous section, which included a discussion of the effects of adjustments on expenditures at all education levels combined, and separately for primary-secondary and tertiary education, this section focuses exclusively on primary-secondary education. The main reason for not examining the effects of adjustments here is because of problems in establishing comparable data on full-time-equivalent enrollments (FTEs) in preprimary and tertiary education. However, the effects of adjustments on expenditures per student for tertiary education are explored further in Appendix C.

The effects of adjustments on expenditures per student for primary-secondary education are presented in Exhibits IV-6a and IV-6b. Exhibit IV-6a presents each country's indicator of total public and private expenditures per student based on reported and estimated expenditures

EXHIBIT IV-6a

Impact of Adjustments on Public and Private Expenditures Per Student for Primary-Secondary Education

Country	Reported Expenditures[1]		Low Estimate of Expenditures[2]		High Estimate of Expenditures[2]	
	Expenditures Per Student	Rank	Expenditures Per Student	Rank	Expenditures Per Student	Rank
Australia	$2,626	9	$2,808	9	$3,059	9
Austria	4,313[3]	5	5,997	1	6,397	2
Canada	5,346[4]	4	4,949	4	4,998	5
France	4,132	6	3,813	7	4,030	7
Germany	5,432	3	4,885	5	5,522	3
Netherlands	3,490	7	3,299	8	3,571	8
Spain	2,547[5]	10	2,518	10	2,550	10
Sweden	6,051[6]	1	5,836[6]	2	6,402[6]	1
United Kingdom	3,350[3]	8	3,941	6	4,048	6
United States	5,555	2	5,424	3	5,424	4
10-Country Mean	$4,284	—	$4,347	—	$4,600	—

[1]Reported expenditures per student are calculated by dividing total expenditures from public and private sources by FTE enrollments in all public and private schools.
[2]Estimated expenditures per student are calculated by dividing total expenditures from public and private sources by *adjusted* FTE enrollments in all public and private schools.
[3]Public and private expenditures per student not reported in *EAG2*; these are public expenditures only.
[4]Expenditures per student are not reported in *EAG2*; this figure is based on data in the OECD database.
[5]Expenditures per student differ from figure reported in *EAG2*. This figure is based on a revised data submission that was not incorporated into *EAG2*.
[6]Public expenditures only.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT IV-6b

Impact of Adjustments on Public Expenditures Per Student for Primary-Secondary Education

Country	Reported Expenditures[1]		Low Estimate of Expenditures[2]		High Estimate of Expenditures[2]	
	Expenditures Per Student	Rank	Expenditures Per Student	Rank	Expenditures Per Student	Rank
Australia	$2,309[3]	9	$2,475	9	$2,639	9
Austria	4,313	4	5,340	2	5,700	2
Canada	4,945[3]	3	4,699	4	4,722	4
France	3,726	5	3,729	5	3,885	5
Germany	3,535[3]	6	3,671	6	3,856	6
Netherlands	3,361[3]	7	2,980	8	3,086	8
Spain	2,213[4]	10	2,014	10	2,047	10
Sweden	6,051	1	5,836	1	6,402	1
United Kingdom	3,350	8	3,518	7	3,575	7
United States	5,204	2	5,073	3	5,073	3
10-Country Mean	$3,901	—	$3,934	—	$4,099	—

[1]Reported expenditures per student are calculated by dividing total expenditures from public sources by FTE enrollments in all public and private schools; figures reported in *EAG2* are calculated by dividing public expenditures by FTE enrollments in public and government-dependent private schools.
[2]Estimated expenditures per student are calculated by dividing total public expenditures by *adjusted* FTE enrollments in all public and private schools.
[3]Expenditures per student not reported in *EAG2*; this figure is based on data in the OECD database.
[4]Expenditures per student differ from figure reported in *EAG2*. The figure in this report is based on a revised data submission that was not incorporated into *EAG2*.
— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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after adjustments; Exhibit IV-6b presents the same information for each country based on total public expenditures per student.

Public and Private Expenditures

The effects of adjustments on total public and private expenditures per student for primary-secondary education were similar to those observed above for total public and private expenditures for primary-secondary education relative to GDP. The 10-country mean of total public and private expenditures per student for primary-secondary education showed a small increase under the low estimate of expenditures (1.5 percent) and a larger increase under the high estimate (7.4 percent), compared to reported expenditures per student (Exhibit IV-7a). However, the effects of expenditure adjustments on the ratio of expenditures per student between the countries with the highest and lowest values were somewhat different. The ratio was unchanged under the low estimate and slightly higher (5.5 percent) under the high estimate of expenditures (Exhibit IV-7b).

In contrast with expenditures relative to GDP, adjustments to total public and private expenditures produced relatively little change in countries' rankings on total public and private expenditures per student (Exhibit IV-6a). Under the low estimate, three of the 10 countries showed no change in their rankings and nine of the 10 countries changed their rankings by two places or less; under the high estimate, four of the 10 countries showed no change in their rankings and nine countries changed their rankings by two places or less. However, the adjustments to expenditures did have a small effect on the position of the United States on this measure relative to other countries; the United States moved from a ranking of second to third under both the low and high estimates of expenditures.

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EXHIBIT IV-7a

10- Country Means and Ratios of Highest to Lowest Country's Values on Total Public and Private Expenditures Per Student for Primary-Secondary Education

Expenditures Relative to GDP	Total Public and Private Expenditures Per Student			
	10- Country Mean	Difference between Reported and Estimated Expenditures	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures
Reported Expenditures	$4,284	—	2.38	—
Low Estimate of Expenditures	4,347	+1.5%	2.38	+0.0%
High Estimate of Expenditures	4,600	+7.4%	2.51	+5.5%

EXHIBIT IV-7b

10- Country Means and Ratios on Total Public Expenditures Per Student for Primary-Secondary Education

Expenditures Relative to GDP	Total Public Expenditures Per Student			
	10- Country Mean	Difference between Reported and Estimated Expenditures	Ratio of Highest to Lowest Country's Value	Difference between Reported and Estimated Expenditures
Reported Expenditures	$3,901	—	2.73	—
Low Estimate of Expenditures	3,934	+0.8%	2.90	+6.2%
High Estimate of Expenditures	4,099	+5.1%	3.13	+14.7%

— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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Public Expenditures

As with total public and private expenditures, the 10-country mean for total public expenditures per student for primary-secondary education showed a very small increase under the low estimate (0.8 percent) and a higher increase (5.1 percent) under the high estimate (Exhibit IV-7b). However, the ratios between the countries with the highest and lowest values on the indicator increased under both the low estimate (6.2 percent) and the high estimate (14.7 percent), compared with the ratio under reported expenditures per student (Exhibit IV-7b).

The adjustments to total public expenditures again produced only marginal differences in countries' rankings on the indicator (Exhibit IV-6b). Under both the low and high estimates, five of the 10 countries showed no change in their rankings and *all 10 countries* changed their rankings by two places or less. In addition, adjustments to expenditures had a small effect on the position of the United States on this measure relative to other countries; the United States ranking dropped from second to third in the rankings based on both the low and high estimates of expenditures.

Summary of Effects of Adjustments on Key Finance Indicators

Several important findings emerged concerning the effects of expenditure adjustments on key finance indicators. This section presents the findings first for expenditures relative to GDP for all education levels and then for expenditures per student for primary-secondary education.

Expenditures Relative to GDP

Adjustments to improve comparability produced changes on nearly all countries' values on expenditures relative to GDP. (The magnitude of these changes were the same as those reported for total expenditures in Exhibits III-1a, 1b, 2a, 2b, 3a, and 3b in Chapter III.) However, these

adjustments had different effects on expenditures from different sources and expenditures for different education levels.

First, expenditure adjustments had a relatively small effect on total *public expenditures* relative to GDP. This was the case for primary-secondary education, tertiary education, as well as for all education levels combined. The correlations between the 10 countries' reported total public expenditures relative to GDP and estimated expenditures after adjustments to improve comparability were consistently very high — +.84 or higher (Exhibit IV-8a). Although countries' values on the indicator changed after expenditure adjustments, there was a very strong correlation between countries' reported and estimated expenditures relative to GDP. In addition, countries' rankings on total public expenditures relative to GDP did not change very much after adjustments to improve comparability. Rank order correlations of countries' rankings on reported and estimated expenditures relative to GDP were +.82 and above for all measures of expenditures relative to GDP (Exhibit IV-8b). **This analysis would therefore suggest a high level of confidence in the OECD indicators of total public expenditures relative to GDP.**

Second, adjustments to expenditures had a relatively small impact on total *public and private expenditures* relative to GDP for *tertiary education*, but greater effect on expenditures relative to GDP for primary-secondary education and for all education levels combined. For tertiary education, the correlations between reported and estimated total public and private expenditures relative to GDP were above +.9 and rank order correlations were about +.8. **This would suggest a high level of confidence in the OECD indicator of total public and private expenditures relative to GDP for tertiary education. However, the indicator does not appear to be as good for primary-secondary education and for all education levels combined.** Correlations between countries' reported and estimated total public and private expenditures relative to GDP for primary-secondary education were +.49 and +.44, respectively, under the low

EXHIBIT IV-8a

Correlations between Reported and Estimated Expenditures

Finance Indicator	All Education Levels		Primary-Secondary Education		Tertiary Education	
	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures
Public and Private Expenditures Relative to GDP	+.70	+.63	+.49	+.44	+.97	+.94
Public Expenditures Relative to GDP	+.93	+.89	+.86	+.84	+.95	+.92
Public and Private Expenditures Per Student	—	—	+.87	+.86	—	—
Public Expenditures Per Student	—	—	+.95	+.94	—	—

— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT IV-8b

Rank Order Correlations between Reported and Estimated Expenditures

Finance Indicator	All Education Levels		Primary-Secondary Education		Tertiary Education	
	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures	Low Estimate of Expenditures	High Estimate of Expenditures
Public and Private Expenditures Relative to GDP	+.54	+.61	+.43	+.26	+.81	+.79
Public Expenditures Relative to GDP	+.82	+.83	+.92	+.89	+.92	+.84
Public and Private Expenditures Per Student	—	—	+.83	+.88	—	—
Public Expenditures Per Student	—	—	+.95	+.95	—	—

— Not applicable.

Source: *International Expenditure Comparability Study*, 1997.

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and high estimates of expenditures (Exhibit IV-8a), and rank order correlations based on countries' reported and estimated expenditures relative to GDP were lower, especially for the high estimate (+.43 under the low estimate and +.26 under the high estimate of expenditures) (Exhibit IV-8b). Similarly, correlations between countries' reported and estimated total public and private expenditures relative to GDP for all education levels combined were +.70 and +.63, (Exhibit IV-8a) and rank order correlations were +.54 and +.61 (Exhibit IV-8b).

Expenditures Per Student for Primary-Secondary Education

Adjustments to expenditures had a relatively small effect on countries' expenditures per student for primary-secondary education. Although adjustments to expenditures to improve comparability produced a change in countries' expenditures per student, countries' relative expenditures per student changed very little as a result of expenditure adjustments. The correlations between reported and estimated total public expenditures per student for primary-secondary education were well above +.9 (Exhibit IV-8a), and the rank order correlations were of the same magnitude (Exhibit IV-8b). The correlations between public and private expenditures per student were slightly lower, but were still very high. **The analysis therefore suggests a high level of confidence in the OECD indicator of total public expenditures per student for primary-secondary education, as well as the indicator of total public and private expenditures per student.**

Assessment of the Quality of OECD Expenditure Indicators

This chapter examined the effects of adjustments to countries' expenditure data to improve comparability on two main indicators of countries' investment in education: expenditures relative to GDP; and expenditures per student. The effects on the first indicator were examined for all education levels combined and separately for primary-secondary education and tertiary education;

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the effects on the second indicator were for primary-secondary education only. The analyses presented above suggest several important conclusions about the comparability of international expenditure data and how comparability problems affect interpretations of the United States' investment in education.

First, it is clear from this analysis that, despite the comparability problems, **expenditure data reported to the OECD for *EAG2* provide a good measure of countries' *total public expenditures relative to GDP*, for all education levels combined, as well as for primary-secondary education and tertiary education.** The reported data also provide a good indicator of countries' relative ranking on total public expenditures relative to GDP. Although adjustments to expenditures resulted in increases or decreases in expenditures in all countries, they had very little effect on countries' relative standing on this indicator. Most or all countries changed their rankings on this indicator by two or fewer places as a result of adjustments to improve comparability, and the rank order correlations between countries' reported and estimated expenditures were quite high at all education levels. **Policy makers and the general public should therefore have a great deal of confidence in the OECD indicators of total *public* expenditures relative to GDP.**

Second, expenditure data provided to the OECD also provide a good indicator of countries' total *public and private expenditures relative to GDP for tertiary education* and their relative ranking on this indicator. The indicator is, however, more problematic for all education levels combined and for primary-secondary education. At the tertiary level, adjustments to improve comparability again did not change significantly most countries' rankings on the indicator relative to other countries in the study. However, this was not the case for all education levels combined and for primary-secondary education. Countries such as Austria and the United Kingdom did not include substantial private expenditures in non-tertiary sectors in their

OECD submissions. Consequently, estimated additions to expenditures to fill in missing sectors and activities both increased these countries' expenditures relative to GDP and their rankings on the indicator relative to other countries. **A high level of confidence is therefore warranted in countries' rankings based on the OECD indicator of total public and private expenditures relative to GDP for tertiary education, but not as much for primary-secondary education and for all education levels combined.**

Third, expenditure data reported to the OECD for *EAG2* provide a very good indicator of countries' *total expenditures per student for primary-secondary education* and countries' relative ranking on this indicator. This is the case both for total public and private expenditures per student combined and for total public expenditures per student alone. Again, adjustments to address comparability problems produced changes in expenditures in all countries, and, in counties such as Austria and the United Kingdom, the additions to expenditures for primary-secondary education were substantial. However, with the exception of Austria, these adjustments had only very little effect on countries' rankings on this indicator. No country except Austria changed its ranking by more than two places on the indicator of expenditures per student, and the rank order correlations between reported and estimated expenditures per student were all quite high. **As with total public expenditures relative to GDP, policy makers and the general public should have a great deal of confidence in countries' rankings based on the OECD indicators of both total public and private expenditures and total public expenditures per student for primary-secondary education.**

Finally, the findings presented so far have focused on how all countries compared with each other. However, taking a narrower perspective and looking only at the United States in relation to other countries, it is clear from the analysis that **the data reported to the OECD for *EAG2* provide a very good indicator of how the United States ranks on its investment in**

education, compared to other countries, at all education levels. Looking first at expenditures relative to GDP, the analysis finds that, based on reported expenditures, the United States ranked near the top of the 10 countries on total public and private expenditures relative to GDP for all education levels combined, as well as for primary-secondary education and tertiary education. After adjustments to expenditures, the United States continued to be near the top of the 10 countries' rankings on this indicator for all education levels combined and for tertiary education, but was slightly lower in the rankings on the indicator for primary-secondary education. The results were slightly different for total public expenditures relative to GDP. The United States continued to be near the top of the 10 countries' rankings on this indicator for tertiary education, but was slightly lower in the rankings for primary-secondary education and for all education levels combined.

Similar results were found for the indicator of public and private expenditures per student. Adjustments to expenditures again produced relatively small changes in the position of the United States on the indicator. Based on reported expenditures, the United States ranked near the top of the 10 countries on total public and private expenditures per student; after adjustments, the ranking dropped by one or two places. On total public expenditures per student alone, the United States ranked near the top of the 10 countries, based on both reported expenditures and estimated expenditures after adjustments.

It is, of course, difficult to quantify precisely the quality of the expenditure indicators published by the OECD in *EAG2*. However, the summary table that follows attempts to provide a relative sense of the overall quality of the indicators. Indicators that are assessed to be the best in overall quality are designated as "+++;" indicators that are of good quality are designated as "++"; indicators that are more problematic are designated ass "+." Finally indicators that have not been thoroughly assessed are designated with a "—."

EXHIBIT IV-9

Overall Quality of Indicators of Expenditures Relative to GDP and Expenditures Per Student

Finance Indicator	All Education Levels	Primary-Secondary Education	Tertiary Education
Public and Private Expenditures Relative to GDP	++	+	+++
Public Expenditures Relative to GDP	+++	+++	+++
Public and Private Expenditures Per Student	—	+++	—
Public Expenditures Per Student	—	+++	—

Key: +++ Very good quality indicator; ++ Good quality indicator; + Fair quality indicator; — Indicator not assessed.

Source: *International Expenditure Comparability Study*, 1997.

In summary, adjustments to expenditures to address comparability problems clearly produce increases or decreases in all countries' expenditures. However, the adjustments have relatively little effect on countries' positions on two major indicators of countries' public financial investment in education. **Although expenditure data countries submitted to the OECD for EAG2 were deficient in many respects, they were more than adequate enough to provide good indicators of countries' public expenditures for education and their relative rankings on these indicators. In addition, improvements to the OECD finance collection for subsequent editions of *Education at a Glance (EAG)* have addressed many of the comparability problems described at length in this study. It could be anticipated that expenditure indicators reported in the third and four editions of *EAG* provided even more accurate pictures of countries' financial investments in education.**

Steps to Improve the Comparability of International Expenditure Data

Although the expenditure indicators reported by the OECD provide a good picture of countries' overall investments in education and their rankings on some key education indicators, that does not mean that further improvements are not needed in the expenditure data. Two main actions are required to improve further the quality and comparability of expenditure data used in international comparisons. Most important, the international organizations should continue to work on improving their data collection forms, providing better instructions to countries to complete the forms, and providing better definitions of terms and methods for estimating expenditures that are missing from national datasets. In addition, countries participating in international collections of finance data should attempt to improve the quality of the data they submit to international agencies. Statistical agencies and education ministries should identify data sources to fill in gaps in their submissions, e.g., include private expenditures for education more consistently, adhere more closely to definitions and calculation procedures to provide more accurate and comparable data, and adopt standard procedures for estimating expenditures or allocating expenditures across education levels.

Since the International Expenditure Comparability Study was initiated in 1992, several major steps have been taken to improve the comparability of expenditure data, based in part on the work of this study. The OECD substantially revised its finance collection for the third edition of *Education at a Glance*, providing more specific and comprehensive instructions to countries to complete the surveys and requiring much more detail on expenditures to permit better understanding of the contents of countries' data. Many of the changes in data collection procedures were described more fully in Volume I of this report. Furthermore, some countries have modified the expenditure data they provide to international agencies to address the

comparability problems identified in Volume I of this study; other countries are considering similar actions for future international collections.

Major change in international data collections does not come overnight: change is incremental and frequently takes a long time. However, an important conclusion of this study is that improvement is possible — particularly after problems of data comparability have been documented thoroughly. Improvements to the OECD finance collections for subsequent editions of *EAG* have already addressed many of the comparability problems described at length in Volume I of this study. It would therefore be anticipated that expenditure data used to produce the indicators reported in the third and fourth editions of *EAG* and other international reports will provide even more accurate pictures of countries' financial investments in education.

APPENDIX A

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APPENDIX A

ADJUSTMENT OF DATA ON PUBLIC EXPENDITURES TO IMPROVE COMPARABILITY

Chapter II presented adjustments to each country's data on total public and private expenditures to improve comparability. This appendix presents adjustments to each country's data on total public expenditures. The definitions of the terms used in *EAG2* follow.

In *EAG2*, public and private expenditures represented expenditures from public and private funding sources. Public expenditures include funds provided by any level of government — central (national), regional (state or provincial), or local. They include funds provided by both public education authorities and by public agencies whose responsibilities lie outside education. The latter include agencies such as ministries of health, which have a specific area of responsibility, and ministries of public works, which construct not only schools but other types of public facilities (Barro 1996).

Private expenditures include funds from households (students or their families) and other private entities such as business firms, unions, associations, religious bodies, foundations, and other nonprofit organizations. Household expenditures consist mainly of tuition fees and payments to educational institutions for ancillary services such as housing and meals. The education expenditures of private entities other than households include funds provided to educational institutions through grants and contracts for research or other services, donations, earnings of endowment funds, and scholarships or other forms of financial aid provided to students by private organizations.

AUSTRALIA

EXHIBIT A-1

Summary of Comparability Problems and Adjustments to Australia's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of public expenditures for child care centers.	• No adjustment: data unavailable to estimate expenditures.
	• Exclusion of expenditures for pre-year-1 (kindergarten) classes in public primary schools from preprimary education.	• Expenditures allocated to preprimary education based on preprimary share of preprimary and primary school enrollments in each state. Low Estimate: One-tenth of primary education expenditures. High Estimate: Between one-seventh and one-eighth of primary education expenditures.
Primary-Secondary Education	• Exclusion of expenditures for fringe benefits such as health insurance, retirement (superannuation), payroll tax, long service leave by government (public) schools.	• Expenditures for retirement and workmen's compensation estimated to be between 10% and 15% of salaries, health insurance at between 1% and 5% of salaries.
	• Exclusion of expenditures by local governments for government schools.	• Expenditures of $1 million from Australian Bureau of Statistics (ABS) national accounts data added to current and total expenditures.
	• Exclusion of expenditures for transportation by non-government (private) schools.	• Estimated expenditures are between 1% and 5% of current expenditures of non-government schools.
	• Inclusion of expenditures for debt service by non-government schools in current expenditures.	• Expenditure removed from current and total expenditures.
	• Inclusion of expenditures for pre-year-1 (kindergarten) classes in public primary schools in primary education.	• Expenditures removed from primary/secondary education and included in preprimary education. Low Estimate: Between one-seventh and one-eighth of primary education expenditures. High Estimate: One-tenth of primary education expenditures.
	• Exclusion of Technical and Further Education (TAFE) expenditures for basic education and basic employment skills from secondary education.	• 15% of TAFE expenditures allocated to primary/secondary education based on share of TAFE enrollments in basic education and employment skills courses.
Tertiary Education	• Inclusion of other operating expenditures by TAFE institutions as capital expenditures, instead of current expenditures.	• Expenditures for other operating expenditures in task force on finance data for vocational education and training added to current operating expenditures and total expenditures.
	• Inclusion of **all** TAFE expenditures, including basic education and employment skills, in tertiary education (ISCED 5).	• 15% of TAFE expenditures excluded from tertiary education and included in primary/secondary education.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-2a

Adjustment of Australia's Data on Total Public Expenditures to Improve Comparability (Australian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
ABS Expenditure Data Adjusted to Correspond with Printouts	+22	+22
Primary-Secondary Education		
Estimate of Expenditures for Retirement and Workmen's Compensation in Government Schools Added to Expenditures	+649	+973
Estimate of Expenditures for Health Insurance in Government Schools Added to Expenditures	+65	+324
ABS Expenditures by Local Governments Added to Expenditures	+1	+1
Estimate of Expenditures for Transportation in Non-Government Schools Added to Expenditures	+17	+83
Expenditures for Debt Service in Non-Government Schools Accounted for in Current Expenditures Removed from Expenditures	-77	-77
Tertiary Education		
Addition of TAFE Other Operating Expenditures to Expenditures	+345	+345
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+1,022	+1,671

EXHIBIT A-2b

Summary of Adjustments to Australia's Data on Total Public Expenditures for All Education Levels Combined (Australian Dollars, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	17,660	18,682	+5.8%	19,331	+9.5%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-3a

Adjustment of Australia's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Australian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+22	+22
Interlevel Transfers		
Estimate of Expenditures for Pre-Year 1 (Kindergarten) Classes in Government Schools Allocated Based on Share of Primary Enrollment in the States	+324	+454
Estimate of Expenditures for Pre-Year 1 (Kindergarten) Classes in Non-Government Schools Allocated Based on Share of Primary Enrollment in the States	+40	+56
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+386	+532
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+655	+1,304
Interlevel Transfers		
Estimate of Expenditures for Pre-Year 1 (Kindergarten) Classes Subtracted Based on Share of Primary Enrollment in the States	-454	-324
Estimate of Expenditures for Pre-Year 1 (Kindergarten) Classes Subtracted Based on Share of Primary Enrollment in the States	-56	-40
Estimate of TAFE Expenditures for Basic Education and Employment Skills Added to Expenditures	+353	+353
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	+498	+1,293
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+345	+345
Interlevel Transfers		
Estimate of TAFE Expenditures for Basic Education and Employment Skills Transferred to Primary-Secondary Education	-353	-353
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-8	-8

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-3b

Summary of Adjustments to Australia's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Australian Dollars, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	219	605	+176.3%	751	+242.9%
Primary-Secondary Education					
Total Expenditures	11,500	11,998	+4.3%	12,793	+11.2%
Tertiary Education					
Total Expenditures	5,941	5,933	-0.1%	5,933	-0.1%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

AUSTRIA

EXHIBIT A-4

Summary of Comparability Problems and Adjustments to Austria's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of expenditures for civil service pensions.	• Estimated expenditures are between 16% and 20% of gross salaries for civil servants.
	• Omission of expenditures for administrative and support functions performed by Länder and local governments.	• Estimated expenditures are between 2% and 5% of total expenditures.
Primary-Secondary Education	• Omission of expenditures for civil service pensions.	• Estimated expenditures are between 16% and 20% of gross salaries of civil servants.
	• Omission of some public expenditures for adult education.	• ACSO estimate of 3.25 billion AS added to public expenditures.
	• Omission of expenditures for administrative and support functions performed by Länder and local governments.	• Estimated expenditures are between 2% and 5% of total expenditures.
	• Inclusion of public subsidies for student living expenses.	• Public subsidies for student living expenses excluded from expenditures.
Tertiary Education	• Omission of expenditures for civil service pensions.	• Estimated expenditures are between 16% and 20% of gross salaries of civil servants.
	• Inclusion of substantial expenditures for hospitals in tertiary education.	• Expenditures for hospitals in statistics of higher education ministry subtracted from expenditures.
	• Inclusion of public subsidies for student living expenses.	• Public subsidies for student living expenses excluded from expenditures.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-5a

Adjustment of Austria's Data on Total Public Expenditures to Improve Comparability (Schillings, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Civil Service Pensions Added to Expenditures	+485	+772
Expenditures for Administrative and Support Functions Performed by Länder and Local Authorities Added to Expenditures	+153	+414
Primary-Secondary Education		
Estimate of Civil Service Pensions Added to Expenditures	+6,669	+9,929
Public Expenditures for Adult Education Added to Expenditures	+3,250	+3,250
Expenditures for Administrative and Support Functions Performed by Länder and Local Authorities Added to Expenditures	+1,602	+4,037
Expenditures for Subsidies for Student Living Expenses Subtracted from Expenditures	-1,538	-1,538
Tertiary Education		
Estimate of Civil Service Pensions Added to Expenditures	+1,035	+1,478
Expenditures for Hospitals Subtracted from Expenditures	-3,773	-3,773
Expenditures for Subsidies for Student Living Expenses Subtracted from Expenditures	-988	-988
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+6,895	+13,581

EXHIBIT A-5b

Summary of Adjustments to Austria's Data on Total Public Expenditures for All Education Levels Combined (Schillings, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	104,080	110,975	+6.6%	117,661	+13.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-6a

Adjustment of Austria's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Schillings, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+638	+1,186
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+638	+1,186
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+9,983	+15,678
Interlevel Transfers		
Special Education Expenditures Transferred from Unallocated Expenditures	+833	+833
Estimated Two-Thirds of Expenditures for Other Types of Education Transferred from Unallocated Expenditures	+347	+347
Textbook Expenditures Transferred from Unallocated Expenditures	+1,029	+1,029
Scholarship Expenditures Transferred from Unallocated Expenditures	+1,068	+1,068
Estimate of 80 Percent of Other Unallocated Expenditures Added to Expenditures	+3,002	+3,002
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	+16,262	+21,957
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-3,726	-3,283
Interlevel Transfers		
Estimated One-Third of Expenditures for Other Types of Education Transferred from Unallocated Expenditures	+173	+173
Estimate of 20 Percent of Other Unallocated Expenditures Added to Expenditures	+751	+751
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-2,802	-2,359

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-6b

Summary of Adjustments to Austria's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Schillings, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	6,630	7,268	+9.6%	7,816	+17.9%
Primary-Secondary Education					
Total Expenditures	68,292	84,554	+23.8%	90,249	+32.2%
Tertiary Education					
Total Expenditures	21,954	19,152	-12.8%	19,595	-10.7%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	7,203	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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CANADA

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EXHIBIT A-7

Summary of Comparability Problems and Adjustments to Canada's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of public expenditures for child care centers.	• Federal and provincial expenditures on center-based child care from survey conducted by the New Democratic Party and the University of Toronto added to expenditures.
	• Exclusion of expenditures for kindergarten and pre-kindergarten classes in public schools from preprimary education.	• Estimated public expenditures for kindergarten and pre-kindergarten classes allocated to preprimary education based on enrollments and pupil-teacher ratios published in the Canadian "Education-at-a-Glance" report.
Primary-Secondary Education	• Inclusion of education programs in federal prisons.	• Line item expenditure for prison education found in the 1988-1989 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.
	• Inclusion of expenditures for kindergarten and pre-kindergarten classes in public schools in primary and secondary education.	• Estimated public expenditures for kindergarten and pre-kindergarten classes based on enrollments and pupil-teacher ratios published in the Canadian "Education-at-a-Glance" report subtracted from expenditures.
Tertiary Education	• Inclusion of expenditures for in-service training programs in public agencies.	• Expenditures of public agencies for in-service training found in the 1988-1989 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.
	• Inclusion of university expenditures for local property taxes.	• Expenditures for local property taxes found in the 1988-1989 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from expenditures.
	• Inclusion of government expenditures for scholarships at universities.	• 100% of university scholarships found in 1988-89 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from tertiary expenditures.
	• Inclusion of government expenditures for scholarships at community colleges.	• 100% of community college scholarships found in 1988-89 *Financial Statistics of Education* and inflated to 1991 dollars subtracted from tertiary expenditures.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-8a

Adjustment of Canada's Data on Total Public Expenditures to Improve Comparability (Canadian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Expenditures for Public "Center-Based" Child Care Added to Expenditures	+742	+820
Primary-Secondary Education		
Expenditures for Prison Education Programs Subtracted from Expenditures	-17	-17
Tertiary Education		
Expenditures for In-Service Training Programs in Non-Education Public Agencies Subtracted from Expenditures	-457	-457
Local Property Taxes Paid by Universities Subtracted from Expenditures	-21	-21
Estimated Government Expenditures for Scholarships at Universities	-701	-701
Estimated Government Expenditures for Scholarships at Community Colleges	-258	-258
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-712	-634

EXHIBIT A-8b

Summary of Adjustments to Canada's Data on Total Public Expenditures for All Education Levels Combined (Canadian Dollars, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	43,488	42,776	-1.6%	42,854	-1.5%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-9a

Adjustment of Canada's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Canadian Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+742	+820
Interlevel Transfers		
Estimate of Expenditures for Pre-Kindergarten and Kindergarten Classes in Public Primary Schools Allocated to Preprimary Education Based on Enrollments and Pupil-Teacher Ratios	+1,300	+1,436
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+2,042	+2,256
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-17	-17
Interlevel Transfers		
Estimate of Expenditures for Pre-Kindergarten and Kindergarten Classes in Public Primary Schools Transferred to Preprimary Education Based on Enrollment and Pupil-Teacher Ratios	-1,436	-1,300
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-1,453	-1,317
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-1,437	-1,437
Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-1,437	-1,437

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-9b

Summary of Adjustments to Canada's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Canadian Dollars, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	0	2,042	—	2,256	—
Primary-Secondary Education					
Total Expenditures	29,106	27,653	-5.0%	27,789	-4.5%
Tertiary Education					
Total Expenditures	14,382	12,945	-10.0%	12,945	-10.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

FRANCE

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EXHIBIT A-10

Summary of Comparability Problems and Adjustments to France's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Inclusion of expenditures for programs for 2-year-olds in expenditures.	• Estimated share of expenditures for programs for 2-year-olds based on enrollments subtracted from expenditures.
	• Inclusion of overestimates of pensions to retirees and the full cost of financing the family allowance system in expenditures.	• Estimated portion of retirement add-on of 31.1% of salaries and total family allowances of 6.7% of salaries subtracted from expenditures.
Primary-Secondary Education	• Omission of expenditures for adult education and other extra-scolaire education.	• 80% to 100% of expenditures for extra-scolaire education reported in UOC2 and RRS added to expenditures. Two-thirds included in primary-secondary education.
	• Inclusion of government expenditures for internal training of workers in expenditures.	• Government expenditures for internal training of workers in RRS data subtracted from expenditures.
	• Inclusion of subsidies for student living expenses in expenditures.	• Expenditures reported in UOC2 subtracted from expenditures.
	• Inclusion of overestimates of pensions to retirees and the full cost of financing the family allowance system in expenditures.	• Estimated portion of retirement add-on of 31.1% of salaries and total family allowances of 6.7% of salaries subtracted from expenditures.
Tertiary Education	• Omission of expenditures for adult education and other extra-scolaire education.	• 80% to 100% of expenditures for extra-scolaire education reported in UOC2 and RRS added to expenditures. One-third included in tertiary education.
	• Omission of separately budgeted and funded research from tertiary education.	• Estimated research expenditures based on OECD R&D statistics for France, adjusted to reflect funds flowing to non-educational institutions, added to expenditures.
	• Inclusion of outlays for housing, meals, and other ancillary services for tertiary students in expenditures.	• Expenditures for ancillary services included in UOC2 subtracted from expenditures.
	• Inclusion of subsidies for student living expenses in expenditures.	• Expenditures reported in UOC2 subtracted from expenditures.
	• Inclusion of overestimates of pensions to retirees and the full cost of financing the family allowance system in expenditures.	• Estimated portion of retirement add-on of 31.1% of salaries and total family allowances of 6.7% of salaries subtracted from expenditures.
	• Inclusion of remuneration of teacher trainees in expenditures.	• Amount reported to INES as remuneration of teacher trainees subtracted from expenditures.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-11a

Adjustment of France's Data on Total Public Expenditures to Improve Comparability (Francs, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimated Expenditures for 2-Year-Olds Subtracted from Expenditures	-4,727	-3,882
Salary Add-Ons for Retirement and Family Allowances Subtracted from Expenditures and Imputed Contributions for Civil Service Pensions Included in Expenditures	-4,572	-3,957
Primary-Secondary Education		
Estimated Expenditures for Adult Education and Extra-Scolaire Education Added to Expenditures	+26,890	+33,600
Government Expenditures for Internal Training of Workers Subtracted from Expenditures	-17,545	-17,545
Subsidies for Student Living Expenses Subtracted from Expenditures	-3,320	-3,320
Salary Add-Ons for Retirement and Family Allowances Subtracted from Expenditures and Imputed Contributions for Civil Service Pensions Included in Expenditures	-25,406	-21,952
Tertiary Education		
Estimated Expenditures for Adult Education and Extra-Scolaire Education Added to Expenditures	+13,435	+16,800
Estimated Research Expenditures Added to Expenditures	+12,400	+15,400
Expenditures for Housing, Meals, and Other Ancillary Services for Tertiary Students Subtracted from Expenditures	-5,000	-4,300
Subsidies for Student Living Expenses Subtracted from Expenditures	-4,100	-4,100
Salary Add-Ons for Retirement and Family Allowances Subtracted from Expenditures and Imputed Contributions for Civil Service Pensions Included in Expenditures	-6,228	-5,706
Unallocated Expenditures		
Remuneration of Teacher Trainees Excluded from Expenditures	-5,992	-5,992
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-24,165	-4,954

EXHIBIT A-11b

Summary of Adjustments to France's Data on Total Public Expenditures for All Education Levels Combined (Francs, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	354,904	330,739	-6.8%	349,950	-1.4%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-12a

Adjustment of France's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Francs, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-9,299	-7,839
Interlevel Transfers		
Expenditures for Special Education Transferred from Unallocated Expenditures to Preprimary Education	+2,380	+2,380
Estimated Share of Unallocated Expenditures for All Education Levels Added to Expenditures	+1,269	+1,269
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	-5,650	-4,190
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-19,381	-9,217
Interlevel Transfers		
Expenditures for Apprenticeship Programs Transferred from Unallocated Expenditures to Secondary Education	+3,944	+3,944
Expenditures for Special Education Transferred from Unallocated Expenditures to Primary-Secondary Education	+9,498	+9,498
Estimated Share of Unallocated Expenditures for All Education Levels Added to Expenditures	+11,417	+11,417
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	+5,478	+15,642
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+10,507	+18,094
Interlevel Transfers		
Estimated Share of Unallocated Expenditures for All Education Levels Added to Expenditures	+1,409	+1,409
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	+11,916	+19,503

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-12b

Summary of Adjustments to France's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Francs, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	35,677	30,027	-15.8%	31,487	-11.7%
Primary-Secondary Education					
Total Expenditures	238,613	244,091	+2.3%	254,255	+6.6%
Tertiary Education					
Total Expenditures	52,162	64,078	+22.8%	71,665	+37.4%
Unallocated Expenditures (Preprimary Through Secondary Education)					
Total Expenditures	21,814	0	-100.0%	0	-100.0%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	14,095	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

GERMANY

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EXHIBIT A-13

Summary of Comparability Problems and Adjustments to Germany's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of expenditures for preschool classes (Vorklassen) and school kindergarten (Schulkindergarten) classes in public primary schools from preprimary education. • Inclusion of expenditures for programs for 2-year-olds in public preprimary schools. • Omission of expenditures of local authorities for administration and operation of schools.	• Public expenditures allocated to preprimary education based on enrollments in preschool classes and school kindergarten classes published in *Basic and Structural Data.* • Estimate of expenditures for programs for 2-year-olds based on share of preprimary enrollments excluded from expenditures. • Estimated expenditures of local authorities at 2% and 5% of current expenditures.
Primary-Secondary Education	• Inclusion of expenditures for preschool classes (Vorklassen) and school kindergarten (Schulkindergarten) classes in public primary schools in primary education. • Omission of expenditures for apprentice programs in public agencies. • Inclusion of expenditures for "second-cycle" students as upper secondary. • Omission of expenditures by local authorities for administration and operation of schools.	• Estimate of public expenditures for preschool classes and school kindergarten classes in regular primary school programs subtracted from expenditures based on enrollments in *Basic and Structural Data.* • Estimate of expenditures added based on enrollments in these programs reported in *Basic and Structural Data.* • 20 to 25 percent of upper secondary expenditures, as recorded in UNESCO form, transferred to the tertiary level. • Estimated expenditures of local authorities at 2% and 5% of current expenditures.
Tertiary Education	• Classification of some continuing vocational education as undistributed. • Inclusion of a large proportion of university hospital expenditures as expenditures for medical school instruction. • Exclusion of expenditures for "second-cycle" students from tertiary category.	• Expenditures from undistributed expenditures transferred to tertiary education based on data in *Basic and Structural Data.* • 20 percent of university hospital "investment" reduced to a range of from 0 to 10 percent. • 20 to 25 percent of upper secondary expenditures, as recorded in UNESCO form, transferred to tertiary education.

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EXHIBIT A-13 (Continued)

Summary of Comparability Problems and Adjustments to Germany's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Undistributed Expenditures	• Inclusion of some continuing vocational education that should be classified as higher education.	• Expenditures transferred to tertiary education based on data in *Basic and Structural Data*.
	• Inclusion of recreational education programs in adult education centers.	• Proportion of "continuing education" expenditure dedicated to recreational adult education subtracted from expenditures based on enrollment data in *Basic and Structural Data*.
	• Inclusion of public expenditures on private firms' in-service training.	• Estimated expenditures subtracted based on line-item in *Basic and Structural Data*.
	• Inclusion of tertiary level public grants for student living expenses (which are not included in our standard).	• "Assistance Schemes" expenditures that are not accounted for by "Training Assistance" loans subtracted from expenditures based on data in *Basic and Structural Data*.
	• Inclusion of public expenditures for tertiary education loans without inclusion of repayments.	• Proportion of "Training Assistance" comprised by loans subtracted from expenditures based on data in *Basic and Structural Data*.
	• Inclusion of primary-secondary level public grants for living expenses as undistributed expenditures.	• Expenditures estimated and subtracted from undistributed expenditures.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-14a

Adjustment of Germany's Data on Total Public Expenditures to Improve Comparability (Deutschmarks, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Expenditures for Programs for 2-Year-Olds in Public Preschools Subtracted from Expenditures	-210	-171
Estimates of Expenditures by Local Authorities for Administration and Operation of Schools Added to Expenditures	+148	+402
Primary-Secondary Education		
Estimate of Expenditures for Public Agencies' Apprenticeships Added to Expenditures	+1,486	+1,817
Estimate of Expenditures by Local Authorities for Administration and Operation of Schools Added to Expenditures	+1,556	+4,337
Tertiary Education		
Estimate of a Proportion of University Hospitals' Expenses Subtracted from Expenditures	-4,800	-4,560
Unallocated Expenditures		
Estimate of Public Expenditures for Recreational Courses at Adult Education Centers, In-Service Training at Private Firms, Loans for Training Assistance, Grants for Living Expenses Excluded from Expenditures	-13,982	-13,865
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-15,802	-12,040

EXHIBIT A-14b

Summary of Adjustments to Germany's Data on Total Public Expenditures for All Education Levels Combined (Deutschmarks, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	107,664	91,862	-14.7%	95,624	-11.2%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-15a

Adjustment of Germany's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Deutschmarks, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-62	+231
Interlevel Transfers		
Estimate of Expenditures for Preschool Classes (Vorklassen) and School Kindergarten Classes (Schulkindergarten) Allocated from Primary-Secondary Education	+359	+397
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+297	+628
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+3,042	+6,154
Interlevel Transfers		
Estimate of Expenditures for Preschool Classes (Vorklassen) and School Kindergarten Classes (Schulkindergarten) Transferred to Preprimary Education	-397	-359
Estimate of Proportion of Upper Secondary Expenditures for Second-Cycle Students Transferred to Tertiary Education	-2,984	-2,441
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-339	+3,354
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-4,800	-4,560
Interlevel Transfers (Including Distribution of Unallocated Expenditures)		
Estimate of Expenditures for Continuing Vocational Education That Should Be Classified as Higher Education Transferred from Unallocated Expenditures	+1,105	+1,222
Estimate of Proportion of Upper Secondary Expenditures for Second-Cycle Students Transferred from Primary-Secondary Education	+2,441	+2,984
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-1,254	-354

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-15b

Summary of Adjustments to Germany's Data on Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Deutschmarks, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	5,602	5,899	+5.3%	6,230	+11.2%
Primary-Secondary Education					
Total Expenditures	63,362	63,023	-0.5%	66,716	+5.3%
Tertiary Education					
Total Expenditures	23,613	22,359	-5.3%	23,259	-1.5%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	15,087	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

THE NETHERLANDS

EXHIBIT A-16

Summary of Comparability Problems and Adjustments to the Netherlands' Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of expenditures by local authorities for administration and support costs. • Unallocated expenditures not distributed to preprimary education. • Inclusion of unspecified public transfers to "other private entities."	• Estimated expenditures of 1% and 4% of current expenditures of public institutions. • 7% of unallocated expenditures distributed to preprimary education. • Estimated transfers provided by the Ministry of Education.
Primary-Secondary Education	• Omission of expenditures for adult education. • MBO included completely as secondary education. • Omission of expenditures by local authorities for administration and support costs. • Unallocated expenditures not distributed to primary-secondary education. • Inclusion of public subsidies for students' living expenses. • Inclusion of unspecified public transfers to "other private entities."	• Expenditures reported in UOC2 added to expenditures for secondary education based on ages of students in MBO courses. • Partial MBO expenditures shifted from secondary to tertiary education based on ages of students in MBO courses. • Estimated expenditures of 1% and 4% of current expenditures of public institutions. • 64.9% of unallocated expenditures distributed to primary-secondary education. • Estimate expenditures for public subsidies provided by the Ministry of Education. • Estimated transfers provided by the Ministry of Education.
Tertiary Education	• Exclusion of expenditures for research by national science agency and contract research funds. • MBO included completely as secondary education. • Unallocated expenditures not distributed to tertiary education. • Inclusion of public subsidies for students' living expenses. • Inclusion of unspecified public transfers to "other private entities."	• Expenditures for research included in tertiary education expenditures. • Partial MBO expenditures shifted in from secondary education based on ages of students in MBO courses. • 28.1% of unallocated expenditures distributed to tertiary education. • Estimate expenditures for public subsidies provided by the Ministry of Education. • Estimated transfers provided by the Ministry of Education.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-17a

Adjustment of the Netherlands' Data on Total Public Expenditures to Improve Comparability (Guilder, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Local Authorities' Expenditures for Administration and Support Costs Added to Expenditures	+18	+71
Estimate of Public Transfers to "Other Private Entities" Subtracted from Expenditures	-102	-102
Primary-Secondary Education		
U0C2 Expenditures for Adult Education in Secondary Education Added to Expenditures	+201	+201
Estimate of Local Authorities' Expenditures for Administration and Support Costs Added to Expenditures	+150	+618
Estimate of Public Transfers to "Other Private Entities" Subtracted from Expenditures	-1,630	-1,630
Estimate of Public Subsidies for Students' Living Expenses Subtracted from Expenditures	-1,178	-1,178
Tertiary Education		
Research Expenditures by National Science Agency and Contract Research Funds Added to Expenditures	+540	+540
Estimate of Public Transfers to "Other Private Entities" Subtracted from Expenditures	-101	-101
Estimate of Public Subsidies for Students' Living Expenses Subtracted from Expenditures	-1,613	-1,613
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-3,715	-3,194

EXHIBIT A-17b

Summary of Adjustments to the Netherlands' Data on Total Public Expenditures for All Education Levels Combined (Guilder, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	29,746	26,031	-12.5%	26,552	-10.7%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-18a

Adjustment of the Netherlands' Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Guilder, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-84	-31
Interlevel Transfers		
7% of Unallocated Expenditures Distributed to Preprimary Education	+61	+61
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	-23	+30
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-2,457	-1,989
Interlevel Transfers		
Partial Expenditures for MBO Shifted to Tertiary Education	-945	-630
64.9% of Unallocated Expenditures Distributed to Primary-Secondary Education	+565	+565
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-2,837	-2,054
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-1,174	-1,174
Interlevel Transfers		
Partial Expenditures for MBO Shifted in from Secondary Education	+630	+945
28.1% of Unallocated Expenditures Distributed to Tertiary Education	+245	+245
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-299	+16

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-18b

Summary of Adjustments to the Netherlands' Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Guilder, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	1,886	1,863	-1.2%	1,916	+1.6%
Primary-Secondary Education					
Total Expenditures	18,699	15,862	-15.2%	16,645	-11.0%
Tertiary Education					
Total Expenditures	8,289	7,990	-3.6%	8,305	+0.2%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	872	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

SPAIN

EXHIBIT A-19

Summary of Comparability Problems and Adjustments to Spain's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Exclusion of public contributions for retirement of civil servants working in education.	• Estimate of the public contribution to civil servants' retirement added, with a lower bound based on 5% of salaries and an upper bound based on 10% of salaries.
	• Exclusion of expenditures for school site health services provided by the government health service.	• Estimate of expenditures added, with a lower-bound estimate of 0.05% of expenditures and an upper-bound estimate of 0.15% of expenditures.
	• Inclusion of expenditures for preprimary programs for 2-year-olds in public preschools.	• Estimated expenditures for programs for 2-year-olds subtracted from expenditures based on proportion of public preschool enrollments.
Primary-Secondary Education	• Inclusion of expenditures for in-service training in public agencies.	• Expenditures for in-service training in public agencies subtracted, based on line item in *Informe Nacional de Educación*.
	• Exclusion of public contributions for retirement of civil servants working in education.	• Estimate of the public contribution to civil servants' retirement added, with a lower bound based on 5% of salaries and an upper bound based on 10% of salaries.
	• Inclusion of public expenditure on grants for student living expenses.	• Portion of line-item expenditures for living-expenses grants for secondary and tertiary students (found in *Informe Nacional de Educación*) attributable to secondary students subtracted from expenditures; lower-bound estimate of 25% of the expenditures for secondary and an upper-bound estimate of 50% for secondary.
	• Exclusion of expenditures for school site health services provided by the government health services.	• Estimate of expenditures added, with a lower-bound estimate of 0.05% of expenditures and an upper-bound estimate of 0.15% of expenditures.
Tertiary Education	• Exclusion of university research expenditures.	• Three line-item amounts for research in the Ministry of Education and Science's budget added to expenditures.
	• Exclusion of public contributions for retirement of civil servants working in education.	• Estimate of the public contribution to civil servants' retirement added to expenditures, with a lower bound based on 5% of salaries and an upper bound based on 10% of salaries.
	• Inclusion of public expenditures on non-collegiate tertiary schools.	• Public expenditures on proprietary schools found in the 1990-91 national private school survey, *Encuesta de Financiación y Gastos de la Enseñanza Privada*, subtracted from expenditures.
	• Inclusion of public expenditure on grants for student living expenses.	• Portion of line-item expenditures for living-expenses grants for secondary and tertiary students (found in *Informe Nacional de Educación*) that is attributable to tertiary students subtracted from expenditures. Lower-bound estimate of 75% of the expenditure for tertiary and an upper-bound estimate of 50% for tertiary.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-20a

Adjustment of Spain's Data on Total Public Expenditures to Improve Comparability (Pesetas, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimate of Public Retirement Contributions to Civil Servants Added to Expenditures	+3,863	+7,751
Estimate of Cost for Public Provision of School-Site Health Services Added to Expenditures	+39	+116
Expenditures for Debt Service Subtracted from Expenditures	-11	-11
Estimate of Proportion of Public Preschool Expenditures for 2-Year-Olds Subtracted from Expenditures	-3,318	-1,991
Primary-Secondary Education		
Estimate of Public Retirement Contributions to Civil Servants Added to Expenditures	+40,695	+82,741
Estimate of Cost for Public Provision of School-Site Health Services Added to Expenditures	+411	+1,241
In-Service Training at Public Agencies Subtracted from Expenditures	-224,569	-224,569
Grants for Student Living Expenses Subtracted from Expenditures	-14,507	-29,014
Expenditures for Debt Service Subtracted from Expenditures	-113	-113
Tertiary Education		
Estimate of Public Retirement Contributions to Civil Servants Added to Expenditures	+8,171	+17,406
Proprietary School Subsidies Subtracted from Public Expenditures	-30,717	-30,717
Grants for Student Living Expenses Subtracted from Expenditures	-43,521	-29,014
University Research Added to Expenditures	+1,246	+1,246
Expenditures for Debt Service Subtracted from Expenditures	-2,483	-2,483
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-264,814	-207,411

EXHIBIT A-20b

Summary of Adjustments to Spain's Data on Total Public Expenditures for All Education Levels Combined (Pesetas, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	2,447,820	2,183,006	-10.8%	2,240,409	-8.5%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-21a

Adjustment of Spain's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Pesetas, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	+573	+5,865
Interlevel Transfers		
Distribution of Unallocated Expenditures for Preprimary and Primary-Secondary Education	+4,447	+4,465
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+5,020	+10,330
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-198,083	-169,714
Interlevel Transfers		
Distribution of Unallocated Expenditures for Preprimary and Primary-Secondary Education	+40,342	+40,325
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-157,741	-129,389
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-67,304	-43,562
Interlevel Transfers		
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-67,304	-43,562

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-21b

Summary of Adjustments to Spain's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Pesetas, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	146,863	151,883	+3.4%	157,193	+7.0%
Primary-Secondary Education					
Total Expenditures	1,829,504	1,671,763	-8.6%	1,700,115	-7.1%
Tertiary Education					
Total Expenditures	426,664	359,360	-15.8%	383,102	-10.2%
Unallocated Expenditures (Preprimary Through Secondary Education)					
Total Expenditures	44,789	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

SWEDEN

EXHIBIT A-22

Summary of Comparability Problems and Adjustments to Sweden's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of expenditures for preprimary programs for 3-to-5-year-olds.	• Estimated expenditures are based on number of 3-to-5-year olds enrolled in school and expenditures per pupil reported to INES.
	• Inclusion of possible overestimate of pension outlays which are based on a legally determined contribution rate that exceeds current pension outlays.	• Low estimate: difference between an imputed contribution rate of 16% and the current rate of 25% subtracted from expenditures. High estimate: no adjustment.
Primary-Secondary Education	• Omission of expenditures for adult education.	• High estimate: expenditures reported in UOC2 added to expenditures. Low estimate: 75% of UOC2 data added to expenditures.
	• Inclusion of possible overestimate of pension outlays, which are based on a legally determined contribution rate that exceeds current pension outlays.	• Low estimate: difference between an imputed contribution rate of 16% and the current rate of 25% subtracted from expenditures. High estimate: no adjustment.
	• Inclusion of scholarships for student living expenses in expenditures.	• Outlays for scholarships provided by Skolverket subtracted from expenditures.
Tertiary Education	• Omission of expenditures for separately funded research.	• Estimated expenditures added based on figures provided INES for 1992, assuming increase of between 2% and 10% between 1991 and 1992.
	• Inclusion of scholarships for student living expenses in expenditures.	• Outlays for scholarships provided by Skolverket subtracted from expenditures.
	• Inclusion of possible overestimate of pension outlays, which are based on a legally determined contribution rate that exceeds current pension outlays.	• Low estimate: difference between an imputed contribution rate of 16% and the current rate of 25% subtracted from expenditures. High estimate: no adjustment.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-23a

Adjustment of Sweden's Data on Total Public Expenditures to Improve Comparability (Kroner, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimated Expenditures for 3-to-5-Year-Olds in Preprimary Education Added to Expenditures	+3,650	+4,000
Expenditures Adjusted to Reduce Possible Overestimate of Pension Outlays	-499	0
Primary-Secondary Education		
Estimated Expenditures for Adult Education Added to Expenditures	+6,481	+8,641
Expenditures Adjusted to Reduce Possible Overestimate of Pension Outlays	-4,158	0
Subsidies for Student Living Expenses Subtracted from Expenditures	-4,725	-4,725
Tertiary Education		
Estimated Expenditures for Research Added to Expenditures	+4,190	+4,519
Subsidies for Student Living Expenses Subtracted from Expenditures	-3,412	-3,412
Expenditures Adjusted to Reduce Possible Overestimate of Pension Outlays	-927	0
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+600	+9,023

EXHIBIT A-23b

Summary of Adjustments to Sweden's Data on Total Public Expenditures (All Education Levels) (Kroner, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	85,328	85,928	+0.7%	94,351	+10.6%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-24a

Adjustment of Sweden's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Kroner, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	+3,151	+4,000
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+3,151	+4,000
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-2,402	+3,916
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-2,402	+3,916
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-149	+1,107
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	-149	+1,107

EXHIBIT A-24b

Summary of Adjustments to Sweden's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Kroner, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	2,231	5,382	+141.2%	6,231	+179.3%
Primary-Secondary Education					
Total Expenditures	67,516	65,114	-3.6%	71,432	+5.8%
Tertiary Education					
Total Expenditures	15,582	15,433	-1.0%	16,689	+7.1%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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UNITED KINGDOM

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EXHIBIT A-25

Summary of Comparability Problems and Adjustments to the United Kingdom's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of expenditures for day nurseries and registered play groups.	• Estimated FTE enrollments multiplied by per student expenditures in public preprimary schools. Low estimate used 60% of public schools' per student expenditures; high estimate used 80%.
	• Inclusion of all preprimary expenditures for special education in unallocated expenditures.	• Expenditures allocated to preprimary education based on the percentage of FTE enrollments in public schools.
	• Omission of expenditures for health care benefits under National Health Service for education staff.	• Estimate of 4% to 6% of the salary portion of staff compensation added to expenditures.
	• Inclusion of expenditures for debt service.	• Reported expenditures for debt service subtracted from expenditures.
Primary-Secondary Education	• Omission of expenditures for adult education centers.	• Current expenditures reported to INES for secondary education were 183 million pounds lower than figure reported to UNESCO. Difference assumed to be adult education and added to expenditures.
	• Inclusion of all expenditures for Further Education (FE) in secondary education.	• Estimated FE share of secondary expenditures (23%) plus estimated payments from private sources allocated to tertiary education. Low estimate assumed 15% of FE expenditures for tertiary education; high estimate assumed 30%, in absence of FTE enrollments by qualification.
	• Inclusion of expenditures for student living expenses (maintenance grants) in primary-secondary education.	• Estimated share of maintenance grants for secondary education subtracted from expenditures for primary-secondary education.
	• Inclusion of all primary-secondary expenditures for special education in unallocated expenditures.	• Expenditures allocated to primary-secondary education based on the percentage of FTE enrollments in public schools.
	• Omission of expenditures for health care benefits under National Health Service for education staff.	• Estimate of 4% to 6% of the salary portion of staff compensation added to expenditures.
	• Inclusion of expenditures for debt service.	• Reported expenditures for debt service subtracted from expenditures.

EXHIBIT A-25 (Continued)

Summary of Comparability Problems and Adjustments to the United Kingdom's Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Tertiary Education	• Omission of expenditures for universities in University Statistical Record (USR) statistics.	• Revenues in 1989-90 University Statistical Record inflated to 1990-91 based on increase in central government funding of universities and added to tertiary expenditures.
	• Omission of a portion of polytechnic and college expenditures.	• Income from endowments, other general sources, research, and other services estimated as a percent of university income, relative to enrollments, and added to tertiary expenditures.
	• Omission of expenditures for training nurses and paramedical personnel in institutions operated by the Department of Health (DH).	• Estimated expenditures based on enrollments and per student expenditures for other tertiary education. Low estimate assumed per student expenditures at 60% of other tertiary expenditures; high estimate assumed 90%.
	• Inclusion of all FE expenditures in secondary education.	• Estimated share of secondary expenditures (23%) plus estimated payments from private sources allocated to tertiary education. Low estimate assumed 15% of secondary expenditures for tertiary education; high estimated assumed 30%.
	• Inclusion of expenditures for student living expenses (maintenance grants) in tertiary education.	• Estimated share of maintenance grants for universities, other higher education and technical training subtracted from tertiary expenditures.
	• Omission of expenditures for health care benefits under National Health Service for education staff.	• Estimate of 4% to 6% of the salary portions of staff compensation added to expenditures.
	• Inclusion of expenditures for debt service.	• Reported expenditures for debt service subtracted from expenditures.
Unallocated Expenditures	• Inclusion of universities' Value Added Tax (VAT) in expenditures	• VAT of 443 million pounds excluded from expenditures.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-26a

Adjustment of the United Kingdom's Data on Total Public Expenditures to Improve Comparability (Pounds, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Estimated Expenditures for Day Nurseries and Registered Play Groups Included in Expenditures[1]	+454	+736
Estimated Expenditures for Health Care Benefits for Education Staff Added to Expenditures	+44	+77
Expenditures for Debt Service Subtracted from Expenditures	-36	-36
Primary-Secondary Education		
Expenditures for Adult Education Centers Included in Secondary Education	+183	+183
Estimate of Public Expenditures for Student Living Expenses (Maintenance Grants) Subtraction from Primary-Secondary Education	-186	-186
Estimated Expenditures for Health Care Benefits for Education Staff Added to Expenditures	+564	+856
Expenditures for Debt Service Subtracted from Expenditures	-796	-796
Tertiary Education		
Estimated Expenditures for Universities, Polytechnics and Colleges Added to Tertiary Education	+1,190	+1,229
Estimated Expenditures for Training Nurses Included in Tertiary Education	+368	+584
Subsidies for Student Living Expenses (Maintenance Grants) Subtracted from Tertiary Education	-842	-842
Estimated Expenditures for Health Care Benefits for Education Staff Added to Expenditures	+121	+207
Expenditures for Debt Service Subtracted from Expenditures	-41	-41
Unallocated Expenditures		
University Value Added Tax (VAT) Excluded from Expenditures	-443	-443
Expenditures for Debt Service Subtracted from Expenditures	-35	-35
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	+545	+1,493

EXHIBIT A-26b

Summary of Adjustments to the United Kingdom's Data on Total Public Expenditures (All Education Levels) (Pounds, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	27,404	27,949	+2.0%	28,897	+5.4%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

[1]Includes a small, but undetermined amount, of private expenditures.

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EXHIBIT A-27a

Adjustment of the United Kingdom's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (Pounds, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	+462	+777
Interlevel Transfers		
Estimated Share of Special Education Allocated to Preprimary Education	+104	+104
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	+566	+881
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	-235	+57
Interlevel Transfers		
Shift of a Portion of Further Education Expenditures Out of Secondary Education	-877	-446
Estimated Share of Special Education Allocated to Primary-Secondary Education	+1,265	+1,265
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	+153	+876
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers and Distribution of Unallocated Expenditures)	+796	+1,137
Interlevel Transfers		
Reclassification of a Portion of Further Education Expenditures into Tertiary Education	+446	+877
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	+1,242	+2,014

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-27b

Summary of Adjustments to the United Kingdom's Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (Pounds, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	995	1,561	+56.9%	1,876	+88.5%
Primary-Secondary Education					
Total Expenditures	19,308	19,461	+0.8%	20,184	+4.5%
Tertiary Education					
Total Expenditures	5,289	6,531	+23.5%	7,303	+38.1%
Unallocated Expenditures (Preprimary Through Secondary Education)					
Total Expenditures	1,369	0	-100.0%	0	-100.0%
Unallocated Expenditures (All Education Levels)					
Total Expenditures	443	0	-100.0%	0	-100.0%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

UNITED STATES

EXHIBIT A-28

Summary of Comparability Problems and Adjustments to the United States' Data on Public Expenditures

Education Level	Comparability Problem	Adjustment to Improve Comparability
Preprimary Education	• Omission of "local match" to the federal Head Start preschool program for low-income children.	• Estimate of local match added to expenditures. Magnitude is supposed to equal 20% of Head Start expenditures, but, in reality, varies. Lower bound estimate put at 15% and upper bound put at 25%. About 40% of local matches emanate from the private sector and about 60% from the public sector.
	• Inclusion of debt service in expenditures.	• Debt service subtracted from expenditures.
Primary-Secondary Education	• Inclusion of expenditures for "community services" — non-education-related expenditures of local public school districts.	• National aggregate total for community services found in the *Digest of Education Statistics* subtracted from expenditures.
	• Inclusion of debt service in expenditures.	• Debt service subtracted from expenditures.
Tertiary Education	• No problems.	• No adjustments.

Source: *International Expenditure Comparability Study*, 1997.

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EXHIBIT A-29a

Adjustment of the United States' Data on Total Public Expenditures to Improve Comparability (U.S. Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Public "Local Match" to Head Start Programs Added to Expenditures	+176	+293
Debt Service Subtracted from Expenditures	-352	-352
Primary-Secondary Education		
"Community Services" of Public Schools Subtracted from Expenditures	-1,206	-1,206
Debt Service Subtracted from Expenditures	-4,145	-4,145
Tertiary Education		
No Adjustments		
SUMMARY OF ADJUSTMENTS TO ALL EDUCATION LEVELS	-5,527	-5,410

EXHIBIT A-29b

Summary of Adjustments to the United States' Data on Total Public Expenditures (All Education Levels) (U.S. Dollars, in Millions)

All Education Levels	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Total Expenditures	315,509	309,982	-1.8%	310,099	-1.7%

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT A-30a

Adjustment of the United States' Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education to Improve Comparability (U.S. Dollars, in Millions)

Description of Adjustment	Low Estimate (millions)	High Estimate (millions)
Preprimary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-176	-59
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PREPRIMARY EDUCATION	-176	-59
Primary-Secondary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	-5,351	-5,351
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO PRIMARY-SECONDARY EDUCATION	-5,351	-5,351
Tertiary Education		
Summary of Additions and Subtractions (Excluding Interlevel Transfers)	0	0
Interlevel Transfers		
No Interlevel Transfers	0	0
SUMMARY OF ADJUSTMENTS TO TERTIARY EDUCATION	0	0

EXHIBIT A-30b

Summary of Adjustments to the United States' Data on Total Public Expenditures for Preprimary, Primary-Secondary and Tertiary Education (U.S. Dollars, in Millions)

Education Level	Reported Expenditures (Currency)	Low Estimate		High Estimate	
		(Currency)	(Percent Change)	(Currency)	(Percent Change)
Preprimary Education					
Total Expenditures	17,143	16,967	-1.0%	17,084	-0.3%
Primary-Secondary Education					
Total Expenditures	212,836	207,485	-2.5%	207,485	-2.5%
Tertiary Education					
Total Expenditures	85,830	85,830	+0.0	85,830	+0.0

Note: Low and high estimates of expenditures may not equal reported expenditures plus adjustments due to rounding; details may not add to total due to rounding.

Source: *International Expenditure Comparability Study*, 1997.

APPENDIX B

APPENDIX B

ADJUSTMENT OF COUNTRIES' DATA ON EXPENDITURES RELATIVE TO GDP

This appendix contains a set of exhibits that present the effects of adjustments to countries data on total expenditures relative to GDP for all education levels combined, for primary-secondary education, and for tertiary education.

EXHIBIT B-1a

Summary of Adjustments to Countries' Data on Total Public and Private Expenditures Relative to GDP for All Education Levels Combined

Country	Reported Expenditures Relative to GDP[1]	Low Estimate		High Estimate	
		Expenditures Relative to GDP[1]	(Percent Change)	Expenditures Relative to GDP[1]	(Percent Change)
Australia	5.47	5.75	+5.1%	6.03	+10.2%
Austria	5.44[2]	6.44	+18.4	6.86	+26.1
Canada	7.28	7.14	-1.9	7.18	-1.4
France	5.97	5.22	-12.6	5.60	-6.2
Germany	5.42	4.44	-18.1	5.02	-7.4
Netherlands	5.77	5.28	-8.5	5.56	-3.6
Spain	5.58	5.04	-9.7	5.15	-7.7
Sweden	6.13[3]	6.29[4]	+2.6	6.90[4]	+12.6
United Kingdom	4.94[2,3]	5.63	+14.0	5.92	+19.8
United States	6.86	6.94	+1.2	6.99	+1.9

[1]Expenditures relative to GDP presented in this exhibit are rounded to two decimal places; OECD published the indicator rounded to one decimal place.
[2]Public expenditures only.
[3]Expenditures from unpublished OECD database differ from published data in *EAG2*.
[4]Public and private expenditures for preprimary education; public expenditures for primary-secondary and tertiary education.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT B-1b

Summary of Adjustments to Countries' Data on Total Public Expenditures Relative to GDP for All Education Levels Combined

Country	Reported Expenditures Relative to GDP[1]	Low Estimate		High Estimate	
		Expenditures Relative to GDP[1]	(Percent Change)	Expenditures Relative to GDP[1]	(Percent Change)
Australia	4.66	4.93	+5.8%	5.10	+9.4%
Austria	5.44	5.80	+6.6	6.14	+12.9
Canada	6.56	6.46	-1.5	6.47	-1.4
France	5.25	4.89	-6.9	5.17	-1.5
Germany	4.12	3.52	-14.6	3.66	-11.2
Netherlands	5.47	4.79	-12.4	4.88	-10.8
Spain	4.47	3.98	-11.0	4.09	-8.5
Sweden	6.13[2]	6.18	+0.8	6.78	+10.6
United Kingdom	4.94[2]	5.04	+2.0	5.21	+5.5
United States	5.70	5.60	-1.8	5.60	-1.8

[1]Expenditures relative to GDP published in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from unpublished OECD database and differ from published data for Canada, France, Germany, the Netherlands, and the United States due to rounding.
[2]Expenditures from unpublished OECD database differ from published data in *EAG2*.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT B-2a

Summary of Adjustments to Countries' Data on Total Public and Private Expenditures Relative to GDP for Primary-Secondary Education

Country	Reported Expenditures Relative to GDP[1]	Low Estimate		High Estimate	
		Expenditures Relative to GDP[1]	(Percent Change)	Expenditures Relative to GDP[1]	(Percent Change)
Australia	3.45	3.59	+4.1%	3.91	+13.3%
Austria	3.57[2]	4.97	+39.2	5.29	+48.2
Canada	4.75[3]	4.40	-7.4	4.44	-6.5
France	3.91[3]	3.68	-5.9	3.90	-0.3
Germany	3.73	3.21	-13.9	3.66	-1.9
Netherlands	3.57	3.23	-9.5	3.54	-0.8
Spain	3.84	3.82	-0.5	3.86	+0.5
Sweden	4.85[2]	4.68[2]	-3.5	5.14[2]	+6.0
United Kingdom	3.48[2,4]	3.93	+12.9	4.12	+18.4
United States	4.10	4.01	-2.2	4.01	-2.2

[1]Expenditures relative to GDP presented in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are from unpublished OECD database and differ from published data for Australia, Germany, Sweden, and the United States due to rounding.
[2]Public expenditures only.
[3]Public and private expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.
[4]Expenditures from unpublished OECD database differ from published data in *EAG2*.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT B-2b

Summary of Adjustments to Countries' Data on Total Public Expenditures Relative to GDP for Primary-Secondary Education

Country	Reported Expenditures Relative to GDP[1]	Low Estimate		High Estimate	
		Expenditures Relative to GDP[1]	(Percent Change)	Expenditures Relative to GDP[1]	(Percent Change)
Australia	3.03	3.16	+4.3%	3.37	+11.2%
Austria	3.57	4.42	+23.8	4.71	+31.9
Canada	4.39[2]	4.17	-5.0	4.19	-4.6
France	3.53[2]	3.61	+2.3	3.76	+6.5
Germany	2.43	2.41	-0.8	2.55	+4.9
Netherlands	3.44	2.92	-15.1	3.06	-11.0
Spain	3.34	3.05	-8.7	3.10	-7.2
Sweden	4.85	4.68	-3.5	5.14	+6.0
United Kingdom	3.48[3]	3.51	+0.9	3.64	+4.6
United States	3.84	3.75	-2.3	3.75	-2.3

[1]Expenditures relative to GDP presented in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from unpublished OECD database and differ from data for Germany, the Netherlands, and Sweden due to rounding.
[2]Public expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.
[3]Expenditures from unpublished OECD database differ from published data in *EAG2*.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT B-3a

Summary of Adjustments to Countries' Data on Total Public and Private Expenditures Relative to GDP for Tertiary Education

Country	Reported Expenditures Relative to GDP[1]	Low Estimate		High Estimate	
		Expenditures Relative to GDP[1]	(Percent Change)	Expenditures Relative to GDP[1]	(Percent Change)
Australia	1.96	1.95	-0.5%	1.95	-0.5%
Austria	1.15[2]	1.01	-12.2	1.04	-9.6
Canada	2.54	2.30	-9.4	2.30	-9.4
France	0.97[3]	1.08	+11.3	1.21	+24.7
Germany	0.90	0.89	-1.1	1.03	+14.4
Netherlands	1.67	1.64	-1.8	1.70	+1.8
Spain	0.96	0.83	-13.5	0.87	-9.4
Sweden	1.12[2]	1.11[2]	-0.9	1.20[2]	+7.1
United Kingdom	0.95[2]	1.31	+37.9	1.51	+58.9
United States	2.36	2.36	+0.0	2.36	+0.0

[1]Expenditures relative to GDP reported in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from unpublished OECD database and differ from published data for Austria, Canada, and Sweden due to rounding.
[2]Public expenditures only.
[3]Public expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT B-3b

Summary of Adjustments to Countries' Data on Total Public Expenditures Relative to GDP for Tertiary Education

Country	Reported Expenditures Relative to GDP[1]	Low Estimate		High Estimate	
		Expenditures Relative to GDP[1]	(Percent Change)	Expenditures Relative to GDP[1]	(Percent Change)
Australia	1.57	1.56	-0.6%	1.56	-0.6%
Austria	1.15	1.00	-13.0	1.02	-11.3
Canada	2.17	1.95	-10.1	1.95	-10.1
France	0.77[2]	0.95	+23.4	1.06	+37.7
Germany	0.90	0.86	-4.4	0.89	-1.1
Netherlands	1.52	1.47	-3.3	1.53	+0.7
Spain	0.78	0.66	-15.4	0.70	-10.3
Sweden	1.12	1.11	-0.9	1.20	+7.1
United Kingdom	0.95	1.18	+24.2	1.32	+38.9
United States	1.54	1.54	+0.0	1.54	+0.0

[1]Expenditures relative to GDP reported in this exhibit are rounded to two decimal places; OECD published this indicator rounded to one decimal place. Expenditures reported here are drawn from unpublished OECD database and differ from published data for Austria, the Netherlands, Sweden, and the United States due to rounding.
[2]Public expenditures relative to GDP not reported in *EAG2*; this figure is based on data in the OECD database.

Source: *International Expenditure Comparability Study*, 1997.

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APPENDIX C

APPENDIX C

ADJUSTMENTS TO COUNTRIES' EXPENDITURES PER STUDENT FOR TERTIARY EDUCATION

In the main sections of the report, assessments were made about the comparability of OECD data on expenditures per student for primary-secondary education. However, assessments were not made about expenditures per student for tertiary education, largely because countries do not consistently report full-time-equivalent (FTE) enrollments at the tertiary level. As indicated in Volume I of the report, many of the continental European countries do not count any university students as part-time, while countries such as Australia, Canada, the United Kingdom, and the United States routinely consider part-time study as an integral part of tertiary education (Barro, 1997).

To provide some perspective on the comparability of indicators of expenditures per student for tertiary education, however, we undertook two analyses. First, we examined the effects of adjustments to tertiary expenditures on expenditures per student for the eight countries in which the problem of FTE enrollments was assessed to be relatively minor. These eight countries were: Australia, Canada, France, the Netherlands, Spain, Sweden, the United Kingdom, and the United States. We then extended the analysis to the two countries in which the problem was judged to be most acute, namely Austria and Germany, attempting to adjust for the lack of part-time students in enrollment counts. It is, of course, difficult to determine the appropriate adjustment of enrollments, since we do not know enough about patterns of participation and progress in these countries. But an upward adjustment of expenditures per student by 25 percent seemed appropriate, in light of information provided by education officials in Austria and Germany

through the country case studies. The results of these analyses are presented in Exhibits C-1a and C-1b.

First, looking at the eight countries with relatively minor enrollment problems, we find that adjustments to total public and private expenditures resulted in substantial changes in expenditures per student in several countries, small changes in a few others, and no change in the United States. However, despite the adjustments, countries' relative expenditures per student for tertiary education based on the low and high estimates were very similar to those reported to the OECD. The correlation between reported public and private expenditures per student and the low estimate of expenditures per student was +.98 and the correlation with the high estimate was +.97. Countries' rankings on total public and private expenditures per student before and after adjustments were also quite similar, as evidenced by rank order correlations of +.95. Similar results were found when adjustments were made to total public expenditures as well. The correlation between countries' reported and estimated total expenditures per student were +.97 and +.96. However, rank order correlations were somewhat lower — +.76 and +.67, respectively, under the low and high estimates of expenditures.

The inclusion of Austria and Germany in the analysis, using upward adjustments of their expenditures per student to account for problems with counts of FTE students, resulted in similar findings. The correlations between reported and estimated total public and private expenditures per student were again above +.90 and rank order correlations were of similar magnitude. For total public expenditures per student, correlations between reported and estimated expenditures per student were also around +.90 and rank order correlations were about +.80. The analysis therefore suggests that, **despite the problems of comparability in tertiary student counts across countries, the indicators of expenditures per student for tertiary education reported by the**

OECD in *EAG2* provide a good measure of countries' relative expenditures per student for tertiary education for most countries, as well as their relative ranking on this measure.

EXHIBIT C-1a

Impact of Adjustments on Public and Private Expenditures Per Student for Tertiary Education

Country	Reported Expenditures[1]		Low Estimate of Expenditures[2]		High Estimate of Expenditures[2]	
	Expenditures Per Student	Rank	Expenditures Per Student	Rank	Expenditures Per Student	Rank
Australia	$10,934	2	$12,940	2	$12,940	2
Austria	6,441[3]	7	5,695	8	5,825	9
Canada	10,415	3	9,463	4	9,463	4
France	5,871	9	6,575	7	7,366	7
Germany	6,322	8	5,330	9	5,964	8
Netherlands	9,373	5	7,826	6	7,646	6
Spain	3,875	10	3,354	10	3,522	10
Sweden	8,548[4]	6	8,467	5	9,155	5
United Kingdom	9,621[3]	4	10,929	3	10,729	3
United States	13,639	1	13,639	1	13,639	1
10-Country Mean	$8,504	—	$8,422	—	$8,625	—

—Not applicable.

[1]Reported expenditures per student are calculated by dividing total expenditures from public and private sources by FTE enrollments in all public and private schools.
[2]Estimated expenditures per student are calculated by dividing total expenditures from public and private sources by *adjusted* FTE enrollments in all public and private schools.
[3]Public and private expenditures per student not reported in *EAG2*; these are public expenditures only.
[4]Public expenditures only.

Source: *International Expenditure Comparability Study*, 1997.

EXHIBIT C-1b

Impact of Adjustments on Public Expenditures Per Student for All Tertiary Education

Country	Reported Expenditures[1]		Low Estimate of Expenditures[2]		High Estimate of Expenditures[2]	
	Expenditures Per Student	Rank	Expenditures Per Student	Rank	Expenditures Per Student	Rank
Australia	$8,726[3]	4	$10,385	1	$10,385	1
Austria	6,441	7	5,619	8	5,749	8
Canada	8,918	3	8,026	5	8,027	5
France	4,713	9	5,754	7	6,435	7
Germany	6,322[3]	8	5,133	9	5,175	9
Netherlands	8,566[3]	5	7,022	6	6,859	6
Spain	3,159	10	2,660	10	2,835	10
Sweden	8,548	6	8,467	4	9,155	3
United Kingdom	9,621	1	9,790	2	9,357	2
United States	8,938	2	8,938	3	8,938	4
10-Country Mean	$7,395	—	$7,179	—	$7,292	—

—Not applicable.

[1]Reported expenditures per student are calculated by dividing total expenditures from public sources by FTE enrollments in all public and private schools; figures reported in *EAG2* are calculated by dividing public expenditures by FTE enrollments in public and government-dependent private schools.
[2]Estimated expenditures per student are calculated by dividing total public expenditures by *adjusted* FTE enrollments in all public and private schools.
[3]Expenditures per student not reported in *EAG2*; this figure is based on data in the OECD database.

Source: *International Expenditure Comparability Study*, 1997.

Listing of NCES Working Papers to Date

Please contact Ruth R. Harris at (202) 219-1831
if you are interested in any of the following papers

Number	Title	Contact
94-01 (July)	Schools and Staffing Survey (SASS) Papers Presented at Meetings of the American Statistical Association	Dan Kasprzyk
94-02 (July)	Generalized Variance Estimate for Schools and Staffing Survey (SASS)	Dan Kasprzyk
94-03 (July)	1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report	Dan Kasprzyk
94-04 (July)	The Accuracy of Teachers' Self-reports on their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey	Dan Kasprzyk
94-05 (July)	Cost-of-Education Differentials Across the States	William Fowler
94-06 (July)	Six Papers on Teachers from the 1990-91 Schools and Staffing Survey and Other Related Surveys	Dan Kasprzyk
94-07 (Nov.)	Data Comparability and Public Policy: New Interest in Public Library Data Papers Presented at Meetings of the American Statistical Association	Carrol Kindel
95-01 (Jan.)	Schools and Staffing Survey: 1994 Papers Presented at the 1994 Meeting of the American Statistical Association	Dan Kasprzyk
95-02 (Jan.)	QED Estimates of the 1990-91 Schools and Staffing Survey: Deriving and Comparing QED School Estimates with CCD Estimates	Dan Kasprzyk
95-03 (Jan.)	Schools and Staffing Survey: 1990-91 SASS Cross-Questionnaire Analysis	Dan Kasprzyk
95-04 (Jan.)	National Education Longitudinal Study of 1988: Second Follow-up Questionnaire Content Areas and Research Issues	Jeffrey Owings
95-05 (Jan.)	National Education Longitudinal Study of 1988: Conducting Trend Analyses of NLS-72, HS&B, and NELS:88 Seniors	Jeffrey Owings

Listing of NCES Working Papers to Date--Continued

Number	Title	Contact
95-06 (Jan.)	National Education Longitudinal Study of 1988: Conducting Cross-Cohort Comparisons Using HS&B, NAEP, and NELS:88 Academic Transcript Data	Jeffrey Owings
95-07 (Jan.)	National Education Longitudinal Study of 1988: Conducting Trend Analyses HS&B and NELS:88 Sophomore Cohort Dropouts	Jeffrey Owings
95-08 (Feb.)	CCD Adjustment to the 1990-91 SASS: A Comparison of Estimates	Dan Kasprzyk
95-09 (Feb.)	The Results of the 1993 Teacher List Validation Study (TLVS)	Dan Kasprzyk
95-10 (Feb.)	The Results of the 1991-92 Teacher Follow-up Survey (TFS) Reinterview and Extensive Reconciliation	Dan Kasprzyk
95-11 (Mar.)	Measuring Instruction, Curriculum Content, and Instructional Resources: The Status of Recent Work	Sharon Bobbitt & John Ralph
95-12 (Mar.)	Rural Education Data User's Guide	Samuel Peng
95-13 (Mar.)	Assessing Students with Disabilities and Limited English Proficiency	James Houser
95-14 (Mar.)	Empirical Evaluation of Social, Psychological, & Educational Construct Variables Used in NCES Surveys	Samuel Peng
95-15 (Apr.)	Classroom Instructional Processes: A Review of Existing Measurement Approaches and Their Applicability for the Teacher Follow-up Survey	Sharon Bobbitt
95-16 (Apr.)	Intersurvey Consistency in NCES Private School Surveys	Steven Kaufman
95-17 (May)	Estimates of Expenditures for Private K-12 Schools	Stephen Broughman
95-18 (Nov.)	An Agenda for Research on Teachers and Schools: Revisiting NCES' Schools and Staffing Survey	Dan Kasprzyk
96-01 (Jan.)	Methodological Issues in the Study of Teachers' Careers: Critical Features of a Truly Longitudinal Study	Dan Kasprzyk

Listing of NCES Working Papers to Date--Continued

Number	Title	Contact
96-02 (Feb.)	Schools and Staffing Survey (SASS): 1995 Selected papers presented at the 1995 Meeting of the American Statistical Association	Dan Kasprzyk
96-03 (Feb.)	National Education Longitudinal Study of 1988 (NELS:88) Research Framework and Issues	Jeffrey Owings
96-04 (Feb.)	Census Mapping Project/School District Data Book	Tai Phan
96-05 (Feb.)	Cognitive Research on the Teacher Listing Form for the Schools and Staffing Survey	Dan Kasprzyk
96-06 (Mar.)	The Schools and Staffing Survey (SASS) for 1998-99: Design Recommendations to Inform Broad Education Policy	Dan Kasprzyk
96-07 (Mar.)	Should SASS Measure Instructional Processes and Teacher Effectiveness?	Dan Kasprzyk
96-08 (Apr.)	How Accurate are Teacher Judgments of Students' Academic Performance?	Jerry West
96-09 (Apr.)	Making Data Relevant for Policy Discussions: Redesigning the School Administrator Questionnaire for the 1998-99 SASS	Dan Kasprzyk
96-10 (Apr.)	1998-99 Schools and Staffing Survey: Issues Related to Survey Depth	Dan Kasprzyk
96-11 (June)	Towards an Organizational Database on America's Schools: A Proposal for the Future of SASS, with comments on School Reform, Governance, and Finance	Dan Kasprzyk
96-12 (June)	Predictors of Retention, Transfer, and Attrition of Special and General Education Teachers: Data from the 1989 Teacher Followup Survey	Dan Kasprzyk
96-13 (June)	Estimation of Response Bias in the NHES:95 Adult Education Survey	Steven Kaufman
96-14 (June)	The 1995 National Household Education Survey: Reinterview Results for the Adult Education Component	Steven Kaufman

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Number	Title	Contact
96-15 (June)	Nested Structures: District-Level Data in the Schools and Staffing Survey	Dan Kasprzyk
96-16 (June)	Strategies for Collecting Finance Data from Private Schools	Stephen Broughman
96-17 (July)	National Postsecondary Student Aid Study: 1996 Field Test Methodology Report	Andrew G. Malizio
96-18 (Aug.)	Assessment of Social Competence, Adaptive Behaviors, and Approaches to Learning with Young Children	Jerry West
96-19 (Oct.)	Assessment and Analysis of School-Level Expenditures	William Fowler
96-20 (Oct.)	1991 National Household Education Survey (NHES:91) Questionnaires: Screener, Early Childhood Education, and Adult Education	Kathryn Chandler
96-21 (Oct.)	1993 National Household Education Survey (NHES:93) Questionnaires: Screener, School Readiness, and School Safety and Discipline	Kathryn Chandler
96-22 (Oct.)	1995 National Household Education Survey (NHES:95) Questionnaires: Screener, Early Childhood Program Participation, and Adult Education	Kathryn Chandler
96-23 (Oct.)	Linking Student Data to SASS: Why, When, How	Dan Kasprzyk
96-24 (Oct.)	National Assessments of Teacher Quality	Dan Kasprzyk
96-25 (Oct.)	Measures of Inservice Professional Development: Suggested Items for the 1998-1999 Schools and Staffing Survey	Dan Kasprzyk
96-26 (Nov.)	Improving the Coverage of Private Elementary-Secondary Schools	Steven Kaufman
96-27 (Nov.)	Intersurvey Consistency in NCES Private School Surveys for 1993-94	Steven Kaufman

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Number	Title	Contact
96-28 (Nov.)	Student Learning, Teaching Quality, and Professional Development: Theoretical Linkages, Current Measurement, and Recommendations for Future Data Collection	Mary Rollefson
96-29 (Nov.)	Undercoverage Bias in Estimates of Characteristics of Adults and 0- to 2-Year-Olds in the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
96-30 (Dec.)	Comparison of Estimates from the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
97-01 (Feb.)	Selected Papers on Education Surveys: Papers Presented at the 1996 Meeting of the American Statistical Association	Dan Kasprzyk
97-02 (Feb.)	Telephone Coverage Bias and Recorded Interviews in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-03 (Feb.)	1991 and 1995 National Household Education Survey Questionnaires: NHES:91 Screener, NHES:91 Adult Education, NHES:95 Basic Screener, and NHES:95 Adult Education	Kathryn Chandler
97-04 (Feb.)	Design, Data Collection, Monitoring, Interview Administration Time, and Data Editing in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-05 (Feb.)	Unit and Item Response, Weighting, and Imputation Procedures in the 1993 National Household Education Survey (NHES:93)	Kathryn Chandler
97-06 (Feb.)	Unit and Item Response, Weighting, and Imputation Procedures in the 1995 National Household Education Survey (NHES:95)	Kathryn Chandler
97-07 (Mar.)	The Determinants of Per-Pupil Expenditures in Private Elementary and Secondary Schools: An Exploratory Analysis	Stephen Broughman
97-08 (Mar.)	Design, Data Collection, Interview Timing, and Data Editing in the 1995 National Household Education Survey	Kathryn Chandler

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Number	Title	Contact
97-09 (Apr.)	Status of Data on Crime and Violence in Schools: Final Report	Lee Hoffman
97-10 (Apr.)	Report of Cognitive Research on the Public and Private School Teacher Questionnaires for the Schools and Staffing Survey 1993-94 School Year	Dan Kasprzyk
97-11 (Apr.)	International Comparisons of Inservice Professional Development	Dan Kasprzyk
97-12 (Apr.)	Measuring School Reform: Recommendations for Future SASS Data Collection	Mary Rollefson
97-13 (Apr.)	Improving Data Quality in NCES: Database-to-Report Process	Susan Ahmed
97-14 (Apr.)	Optimal Choice of Periodicities for the Schools and Staffing Survey: Modeling and Analysis	Steven Kaufman
97-15 (May)	Customer Service Survey: Common Core of Data Coordinators	Lee Hoffman
97-16 (May)	International Education Expenditure Comparability Study: Final Report, Volume I	Shelley Burns
97-17 (May)	International Education Expenditure Comparability Study: Final Report, Volume II, Quantitative Analysis of Expenditure Comparability	Shelley Burns

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